Nationwide House Energy Rating Scheme[®] **Class 2 Summary** NatHERS® Certificate No. #HR-ZN8RQ4-01

Generated on 10 Apr 2024 using Hero 4.0

Property

Address

I of/DP NatHERS climate zone

116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086 1-2-3/213608-24/25713 56 - Mascot AMO



Accredited assessor

Name **Business name** Email Phone Accreditation No. Assessor Accrediting Organisation

Ioannis Fragkoulidis AENEC-Trading as Wide Spectrum Pty Ltd yanni.aenec@gmail.com +61 452648288 10002 **HERA**

Verification

To verify this certificate. scan the QR code or visit http://www.hero-software.com.au /pdf/HR-ZN8RQ4-01. When using either link, ensure you are visiting http://www.hero-software.com.au



National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance Star rating



of all dwellings in this summary.

For more information on your dwelling's rating see: www.nathers.gov.au

NCC heating and cooling maximum loads MJ/m².vr Limits taken from ABCB Standard 2022

	Heating	Cooling
Average load	16.1	9.0
Maximum load	32.1	18.3
Average limit	28.1	20.0
Maximum limit	34.4	21.4

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate or not completed for all dwellings.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-4D4G18-01	A101	14.7 (34)	10.0 (21)	24.7	7.5	n/a
HR-HYS1J3-01	A102	14.8 (34)	6.1 (21)	20.8	8.0	n/a
HR-XN4S3R-01	A103	9.5 (34)	5.8 (21)	15.2	8.6	n/a



Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-6PVU8H-01	A104	11.5 (34)	5.9 (21)	17.5	8.4	n/a
HR-A9YLRQ-01	A105	6.7 (34)	12.2 (21)	18.9	8.2	n/a
HR-JD5BRB-01	A106	3.6 (34)	4.4 (21)	8.0	9.7	n/a
HR-DQXY4F-01	A107	2.0 (34)	8.0 (21)	10.1	9.3	n/a
HR-DXSZTZ-01	A108	26.4 (34)	4.9 (21)	31.3	6.8	n/a
HR-996BMZ-01	A109	17.8 (34)	8.4 (21)	26.2	7.4	n/a
HR-O3FFRI-01	A110	17.4 (34)	7.8 (21)	25.3	7.4	n/a
HR-UMTZ6X-01	A111	27.3 (34)	7.7 (21)	35.0	6.4	n/a
HR-SZQS85-01	A201	12.5 (34)	8.3 (21)	20.9	8.0	n/a
HR-AS2HUD-01	A202	15.3 (34)	5.9 (21)	21.1	7.9	n/a
HR-LC6XUO-01	A203	9.8 (34)	6.5 (21)	16.2	8.4	n/a
HR-5W5QR3-01	A204	12.2 (34)	5.7 (21)	17.9	8.3	n/a
HR-65PH2J-01	A205	6.3 (34)	12.8 (21)	19.1	8.2	n/a
HR-4YMM55-01	A206	3.9 (34)	4.5 (21)	8.4	9.6	n/a
HR-BKQGK0-01	A207	11.2 (34)	5.4 (21)	16.6	8.4	n/a
HR-59WWHD-01	A208	23.8 (34)	5.3 (21)	29.1	7.1	n/a
HR-36AVG4-01	A209	18.2 (34)	9.0 (21)	27.2	7.3	n/a
HR-8QNPOS-01	A210	17.6 (34)	8.0 (21)	25.6	7.4	n/a
HR-ZQ2OA5-01	A211	29.0 (34)	7.6 (21)	36.6	6.2	n/a
HR-D3H1PM-01	A301	19.2 (34)	6.5 (21)	25.7	7.4	n/a
HR-MJXYFG-01	A302	18.6 (34)	6.1 (21)	24.7	7.5	n/a
HR-0SVEZT-01	A303	24.0 (34)	4.4 (21)	28.4	7.2	n/a
HR-7505FE-01	A304	18.3 (34)	5.2 (21)	23.5	7.7	n/a
HR-KHEEU7-01	A305	5.7 (34)	12.9 (21)	18.6	8.2	n/a
HR-ALGL2B-01	A306	5.9 (34)	4.8 (21)	10.8	9.2	n/a
HR-4SA71K-01	A307	4.5 (34)	8.3 (21)	12.7	8.9	n/a
HR-D62XHK-01	A308	19.4 (34)	6.9 (21)	26.4	7.4	n/a
HR-HL43DJ-01	A309	16.7 (34)	10.1 (21)	26.8	7.3	n/a
HR-MA9J5G-01	A310	19.3 (34)	7.5 (21)	26.9	7.3	n/a

MATION WIDE HOUSE

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-QJ8N1Y-01	A311	27.6 (34)	9.9 (21)	37.5	6.1	n/a
HR-903R0W-01	A401	22.6 (34)	9.1 (21)	31.7	6.8	n/a
HR-0J8073-01	A402	18.3 (34)	7.2 (21)	25.5	7.4	n/a
HR-HOU1SJ-01	A403	7.6 (34)	10.1 (21)	17.7	8.3	n/a
HR-WCDQ89-01	A404	7.4 (34)	9.2 (21)	16.6	8.4	n/a
HR-3P7FDL-01	A405	9.5 (34)	6.5 (21)	16.0	8.4	n/a
HR-B1WFM1-01	A406	26.7 (34)	3.2 (21)	30.0	7.0	n/a
HR-XGED0O-01	A407	21.4 (34)	4.4 (21)	25.8	7.4	n/a
HR-P86Q9K-01	A408	9.3 (34)	15.7 (21)	24.9	7.5	n/a
HR-0HC3TO-01	A501	23.0 (34)	13.5 (21)	36.5	6.2	n/a
HR-JEKANZ-01	A502	19.6 (34)	4.4 (21)	24.0	7.6	n/a
HR-GMMZM6-01	A503	18.3 (34)	6.1 (21)	24.4	7.6	n/a
HR-XJYRTK-01	A504	5.6 (34)	10.7 (21)	16.2	8.4	n/a
HR-IVJZGR-01	A505	9.4 (34)	7.5 (21)	16.9	8.4	n/a
HR-8YTWWS-01	A506	23.8 (34)	3.3 (21)	27.1	7.3	n/a
HR-PT4JMK-01	A507	25.2 (34)	4.8 (21)	30.0	7.0	n/a
HR-GIFDW8-01	A508	18.1 (34)	7.3 (21)	25.4	7.4	n/a
HR-33UO10-01	A601	27.6 (34)	8.0 (21)	35.6	6.3	n/a
HR-SQE9WI-01	A602	24.0 (34)	10.1 (21)	34.1	6.4	n/a
HR-IGZ7PS-01	A603	18.3 (34)	11.6 (21)	30.0	7.0	n/a
HR-P5F53Y-01	A604	19.8 (34)	16.9 (21)	36.7	6.2	n/a
HR-QU1YG1-01	A605	16.3 (34)	14.5 (21)	30.8	6.9	n/a
HR-1S75SU-01	A606	31.4 (34)	5.7 (21)	37.1	6.1	n/a
HR-V88HAW-01	A607	27.0 (34)	8.9 (21)	35.9	6.3	n/a
HR-T68MNG-01	A608	24.4 (34)	10.4 (21)	34.8	6.4	n/a
HR-5HBQF2-01	AG01	16.2 (34)	10.9 (21)	27.2	7.3	n/a
HR-1NKFJF-01	AG02	18.6 (34)	6.1 (21)	24.7	7.5	n/a
HR-7V8RIR-01	AG03	25.6 (34)	5.4 (21)	31.0	6.9	n/a
HR-030R2R-01	AG04	14.3 (34)	6.8 (21)	21.1	7.9	n/a



Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-08BZ55-01	AG05	4.5 (34)	12.7 (21)	17.2	8.4	n/a
HR-20X57I-01	AG06	3.1 (34)	6.1 (21)	9.3	9.4	n/a
HR-TMKAG8-01	AG07	3.2 (34)	7.5 (21)	10.8	9.2	n/a
HR-TJZ4LJ-01	AG08	22.3 (34)	3.4 (21)	25.8	7.4	n/a
HR-86A1X5-01	AG09	26.6 (34)	7.3 (21)	33.9	6.5	n/a
HR-EQ0032-01	AG10	18.4 (34)	11.2 (21)	29.6	7.0	n/a
HR-1WC56Z-01	AG11	24.0 (34)	9.0 (21)	33.0	6.6	n/a
HR-3XOGSH-01	ALG01	1.9 (34)	7.3 (21)	9.2	9.4	n/a
HR-NINUAO-01	ALG02	11.6 (34)	3.8 (21)	15.4	8.6	n/a
HR-VS7NDL-01	B101	18.8 (34)	6.9 (21)	25.7	7.4	n/a
HR-UB5CRF-01	B102	32.1 (34)	4.8 (21)	36.9	6.1	n/a
HR-V2Y5QG-01	B103	19.0 (34)	5.4 (21)	24.4	7.6	n/a
HR-WOL588-01	B104	17.2 (34)	11.2 (21)	28.4	7.2	n/a
HR-DUOCH1-01	B105	20.5 (34)	4.4 (21)	24.9	7.5	n/a
HR-YQ05P0-01	B106	9.1 (34)	13.9 (21)	23.0	7.8	n/a
HR-3TZQ3Z-01	B201	17.7 (34)	7.0 (21)	24.7	7.5	n/a
HR-52UM6I-01	B202	30.5 (34)	6.2 (21)	36.7	6.2	n/a
HR-VAAG7G-01	B203	19.3 (34)	9.1 (21)	28.4	7.2	n/a
HR-MMLQK2-01	B204	17.3 (34)	11.3 (21)	28.6	7.1	n/a
HR-CGDFC6-01	B205	20.5 (34)	8.6 (21)	29.1	7.1	n/a
HR-N5IE98-01	B206	9.4 (34)	17.6 (21)	27.0	7.3	n/a
HR-G43FIU-01	B301	22.1 (34)	6.8 (21)	28.8	7.1	n/a
HR-0P9XUH-01	B302	28.1 (34)	7.0 (21)	35.1	6.4	n/a
HR-Z9LCJP-01	B303	26.0 (34)	7.9 (21)	33.9	6.5	n/a
HR-Q38L6C-01	B304	23.5 (34)	9.5 (21)	33.1	6.6	n/a
HR-VJECKK-01	B305	24.1 (34)	7.8 (21)	31.9	6.8	n/a
HR-G527YQ-01	B306	13.3 (34)	18.3 (21)	31.6	6.8	n/a
HR-5ELZG1-01	B401	19.0 (34)	9.0 (21)	28.1	7.2	n/a
HR-Y02JVL-01	B402	16.9 (34)	8.8 (21)	25.7	7.4	n/a



Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-MLG9K9-01	B403	4.1 (34)	12.0 (21)	16.1	8.4	n/a
HR-QK1POG-01	B404	1.9 (34)	13.6 (21)	15.4	8.6	n/a
HR-B4XUF6-01	B501	18.2 (34)	8.3 (21)	26.5	7.4	n/a
HR-00DWD7-01	B502	15.6 (34)	10.1 (21)	25.7	7.4	n/a
HR-HBYXHT-01	B503	3.9 (34)	11.8 (21)	15.7	8.5	n/a
HR-EI58SM-01	B504	1.8 (34)	11.0 (21)	12.8	8.9	n/a
HR-87UOSL-01	B601	21.4 (34)	12.1 (21)	33.4	6.6	n/a
HR-BWPE8T-01	B602	22.1 (34)	12.7 (21)	34.7	6.4	n/a
HR-9V1H9F-01	B603	7.3 (34)	13.2 (21)	20.5	8.0	n/a
HR-LE0AJ9-01	B604	4.9 (34)	13.1 (21)	18.0	8.3	n/a
HR-HN3O9H-01	BG01	31.5 (34)	5.1 (21)	36.7	6.2	n/a
HR-FKHGGO-01	BG02	31.0 (34)	6.5 (21)	37.5	6.1	n/a
HR-UP2AID-01	BG03	13.8 (34)	15.5 (21)	29.3	7.1	n/a
HR-L18CKL-01	BG04	13.8 (34)	15.8 (21)	29.6	7.0	n/a
HR-736LAS-01	BG05	9.7 (34)	5.9 (21)	15.7	8.5	n/a
HR-OPSXLH-01	BG06	9.1 (34)	11.7 (21)	20.8	8.0	n/a
HR-WN798X-01	BLG01	23.8 (34)	7.1 (21)	30.9	6.9	n/a
HR-PJ0VPS-01	BLG02	13.8 (34)	9.4 (21)	23.2	7.7	n/a
HR-JOITOC-01	C101	13.8 (34)	11.7 (21)	25.4	7.4	n/a
HR-VM0J70-01	C102	21.8 (34)	9.9 (21)	31.7	6.8	n/a
HR-J1Z8KN-01	C103	3.1 (34)	9.8 (21)	13.0	8.9	n/a
HR-Y1M4NV-01	C104	22.3 (34)	11.3 (21)	33.5	6.6	n/a
HR-KNA6K4-01	C201	13.6 (34)	11.0 (21)	24.6	7.6	n/a
HR-NV291Q-01	C202	21.9 (34)	9.4 (21)	31.3	6.8	n/a
HR-TV7G7Q-01	C203	1.7 (34)	10.3 (21)	12.0	9.0	n/a
HR-4XKKJI-01	C204	11.4 (34)	13.5 (21)	24.9	7.5	n/a
HR-1P8879-01	C301	15.7 (34)	9.6 (21)	25.4	7.4	n/a
HR-C24L9N-01	C302	14.2 (34)	6.7 (21)	20.9	8.0	n/a
HR-WYOO1J-01	C303	6.0 (34)	8.5 (21)	14.6	8.7	n/a



Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-CCCRDH-01	C304	11.1 (34)	11.6 (21)	22.7	7.8	n/a
HR-K0ZOFF-01	C401	14.0 (34)	10.9 (21)	24.8	7.5	n/a
HR-CXSL8D-01	C402	12.4 (34)	12.4 (21)	24.8	7.5	n/a
HR-XQIEG5-01	C501	20.3 (34)	13.9 (21)	34.2	6.4	n/a
HR-EXTVP0-01	C502	20.0 (34)	14.2 (21)	34.3	6.4	n/a
HR-6P33M7-01	CG01	16.1 (34)	11.9 (21)	28.0	7.2	n/a
HR-SQYTK0-01	CG02	12.4 (34)	17.3 (21)	29.6	7.0	n/a
HR-WJD6B5-01	CG03	8.8 (34)	8.6 (21)	17.4	8.4	n/a
Averages	127x (Total)	16.1	9.0	25.1	7.5	n/a
Maximum Loads a	nd Minimum Ratings	32.1	18.3	37.5	6.1	n/a



Explanatory notes

About the ratings

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an apartment block. The Whole of Home performance rating in this Certificate is the lowest rating for the apartment block. Individual unit ratings are listed in the *'Summary of all dwellings'* section of this Certificate.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy production and storage to estimate the homes societal cost. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

For high quality NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-4D4G18-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
	1-2-3/213608-24/25713
LOUDI	1-2-3/2 13000-24/237 13
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	78.0	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	82.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	14.7	10.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-4D4G18-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-4D4G18-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	age Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage	basica kurok, n'hinor	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.36
KLD	Kitchen/Living	35.58
BED 1	Bedroom	14.50
ENS 1	Night Time	5.75
BED 2	Bedroom	10.85
BATH	Unconditioned	4.25

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	F	U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	······	U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.06	2800	600	Awning	58	SSW	None
BED 1	ATB-003-01 B	1.05	2800	700	Awning	58	SSW	None
BED 1	ATB-004-02 B	1.04	2900	2400	Sliding	45	WNW	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	1.08	2800	3000	Awning	29	SSW	None
ENS 1	ATB-004-01 B	1.07	970	900	Fixed	0	SSW	None
KLD	ATB-004-01 B	1.02	2900	4000	Sliding	60	WNW	None
KLD	ATB-003-01 B	1.03	2900	1450	Sliding	45	SSW	None

Roof window type and performance value

Default* roo	of windows										
Window ID	Wind	ow Descriptio	on				Maximum	SHGC*	tolerance ranges		
							U-value*		lower limit	upper limit	
None											
Custom* roo	of windows										
							Movimum		SHGC sub	ostitution	
Window ID	Winde	ow Descriptio	on				U-value*	SHGC*	tolerance	ranges	
									IOwer IIITIIL	upper infin	
None											
Roof wi	ndow sch	nedule									
Location	Wine ID	wob	Window no.	Openiı %	ng H (leight mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None											
Skylight	type and	l perform	ance								
Skylight ID			Skylight de	scriptior	ו						
None											
Skylight	schedule	e									
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orie atior	nt- า	Outdoor shade	Diffuser	Shaft Refle	ctance	
None											
External	door sc	hedule									
Location		loudio	Height	(mm)	Wi	dth (m	m) Or	ening %	Orier	ntation	
None				•				-			



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4141	SSW		Yes
BED 1	AFS 160/INS/PB	2900	2997	WNW	3080	Yes
BED 2	AFS 160/INS/PB	2900	3620	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	ESE		Yes
ENS 1	AFS 160/INS/PB	2900	3201	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1499	SSW	3168	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	47.3	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
Nono			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-HYS1J3-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A102, 116-120 Frenchs Forest F Frenchs Forest, NSW, 2086	
Lot/DP	1-2-3/213608-24/25713	
NCC Class*	2	
Floor/all Floors	5 of 1 floors	
Туре	New	

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	83.1 Suburban			
Unconditioned*	4.3	NatHERS climate zone		
Total	87.4	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	14.8	6.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-HYS1J3-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





Generated on 10 Apr 2024 using Hero 4.0 for A102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



#HR-HYS1J3-01 NatHERS Certificate

8.0 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		รังสะวารังหรือ อาจอย
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ eyor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*			1		
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.0 Star Rating as of 10 Apr 2024



Penuituro Assessor checked Builder checked Builder checked Occupancy/other	Certificate check	Approva	stage	Construc stage		
	Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging						
Does the dwelling meet the NCC requirement for thermal bridging?						
Insulation installation method						
Has the insulation been installed according to the NCC requirements?						
Building sealing						
Does the dwelling meet the NCC requirements for Building Sealing?						
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)		
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?						
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)				
Does the lighting meet the artificial lighting requirements specified in the NCC?						
Does the hot water system meet the additional requirements specified in the NCC?						
Provisional values* check						
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?						
Other NCC requirements						
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC	



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.89
KLD	Kitchen/Living	32.04
BED 1	Bedroom	15.88
BED 2	Bedroom	10.82
BATH	Unconditioned	4.28
ENS 1	Night Time	4.52

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.12	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	1.11	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	1.09	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	1.10	2900	1500	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	indow Description		Maximum	SHGC*	SHGC substitution tolerance ranges			
		·				U-value*		lower limit	upper limit
None									
Custom* roc	of windows								
Window ID	Wind	ow Description	1			Maximum	SHGC*	tolerance	stitution ranges
						U-value*		lower limit	upper limit
None									
Roof wir	ndow scł	hedule							
Location	Wind ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	INCE Skylight de	actintion					
None			Skylight de	scription					
Location None	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area ((m²) a	Drient- ation	Outdoor shade	Diffuse	Shaft r Reflec	ctance
External	door sc	hedule							
Location			Height	: (mm)	Width (mr	m) Op	pening %	Orien	itation
none									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	Warptance Co	all blour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50	Me	edium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadi projeo	ontal ng feature* ction (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	РВ	2900	1448	WNW	269		Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3298	Yes
BED 2	AFS 160/INS/PB	2900	2287	NNE	288	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1717	NNE	3387	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.8	0.00
INT-PB	Internal Plasterboard Stud Wall	63.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

* Refer to glossary.

8.0 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			

* Refer to glossary.



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recom capacit	mended Y
No Whole of Home Data					

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-XN4S3R-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	83.4	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	87.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.5	5.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u>. <u>au/pdf/HR-XN4S3R-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



8.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construct stage			struction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ rveyor checked	ilder checked	onsent authority/ rveyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	Sul Sul	Bu	Sul	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessn	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.91
KLD	Kitchen/Living	32.05
BED 2	Bedroom	10.91
BATH	Unconditioned	4.28
ENS 1	Night Time	4.75
BED 1	Bedroom	15.82

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	n SHGC* SHGC sub tolerance lower limit	SHGC substitution tolerance ranges		
	·····	U-value*		upper limit		
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges
	· · · · · · · · · · · · · · · · · · ·	U-value*	ence.	lower limit upper limit
None				

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.16	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	1.15	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	1.13	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	1.14	2900	1500	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Descriptior	1			Maximum	SHGC*	SHGC substitu	
						U-value*		lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	Wind					Maximum	SHCC*	SHGC sub tolerance	stitution ranges
WINdow ID	wind	bw Description	1			U-value*	3000	lower limit	upper limit
None									
Roof win	ndow sch	nedule							
Location	Winc ID	low	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	l performa	INCE Skylight de	scription					
None									
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Refle	ctance
None									
External	door scl	hedule							
Location			Height	(mm)	Width (mi	m) Op	pening %	Orien	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	Wa ptance Co	all blour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	/PB	AFS 160mm	FCF/INS/PB		0.50	Me	edium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature

2900

1448

WNW

253

* Refer to glossary.

BED 1

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2276	SSW	293	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW		Yes
KLD	AFS 160/INS/PB	2900	1703	SSW	3392	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.8	0.00
INT-PB	Internal Plasterboard Stud Wall	62.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	5	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	um	معمعمط

		HOL	wiinimum	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data


Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-6PVU8H-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	50.4	Suburban
Unconditioned*	7.1	NatHERS climate zone
Total	57.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.5	5.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-6PVU8H-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	rsent authority/ veyor checked	lder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Bui	Cor sur	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	7.29
KLD	Kitchen/Living	31.91
BED 1	Bedroom	11.24
BATH	Unconditioned	7.09

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum	Maximum U-value* SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	1.19	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	1.17	2900	3600	Sliding	60	WNW	None
KLD	ATB-003-03 B	1.18	2900	1200	Awning	58	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Description	n				Maximu	um * SHGC*	SHGC sub tolerance	stitution ranges
							U-value	;	lower limit	upper limit
None										
Custom* roo	of windows						Maximi	ım	SHGC sub	stitution
Window ID	Windo	ow Description	n				U-value	SHGC*	lower limit upper limit	
None										
Roof win	ndow sch	nedule								
Location	Wind ID	low	Window no.	Openiı %	ng	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None										
Skylight Skylight ID None	type and	l performa	ANCE Skylight de	scriptior	1					
Skylight	schedule	è								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Ori atio	ent- on	Outdoor shade	Diffuser	Shaft Reflec	ctance
None										
External	door scl	hedule	Height	(mm)	W	/idth (mr	n)	Opening %	Orien	tation
None			5			,	,	1 0		
External	wall type	9								
Wall ID		Wall Type				Solar absor	ptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	/PB	AFS 160mm	FCF/INS/PB			0.50		Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	WNW	3061	Yes
KLD	AFS 160/INS/PB	2900	3613	WNW	1570	Yes
KLD	AFS 160/INS/PB	2900	1491	NNE	2801	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	82.1	0.00
INT-PB	Internal Plasterboard Stud Wall	24.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.15	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location Quantity Diameter (mm)
None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				-	
Hot water system					
		Hot	Minim	num	Assessed
Туре	Fuel type	Water	efficie	ency /	daily load
		CER Zone	STC		[litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		D	a mala al
Туре	Fuel type	efficiency / performance		Recommended capacity	

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity	
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-A9YLRQ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086			
Lot/DP	1-2-3/213608-24/25713			
NCC Class*	2			
Floor/all Floors	5 of 1 floors			
Туре	New			

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	73.5	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	77.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	6.7	12.2		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-A9YLRQ-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Cost:





8.2	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approva	l stage	ge Construction stage		AND TONE DAY
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	insent authority/ rveyor checked	ilder checked	insent authority/ rveyor checked	:cupancy/other
It is not mandatory to complete this checklist.	As	sur	Bu	Sur	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type table' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.2 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	5.48
KLD	Kitchen/Living	31.14
ENS 1	Night Time	4.41
BATH	Unconditioned	4.06
BED 1	Bedroom	12.37
BED 2	Bedroom	13.68
HALL	Day Time	6.45

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·········	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC subs	stitution anges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.22	1900	2400	Awning	45	WNW	None
BED 2	ATB-003-01 B	1.23	1900	2400	Awning	45	WNW	None
KLD	ATB-004-02 B	1.20	2900	6000	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-003-01 B	1.21	2800	1100	Awning	58	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	··········	U-value*		lower limit	upper limit	
None						
Custom* roof wi	ndows					

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3009	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2570	SSW	6911	Yes
KLD	AFS 160/INS/PB	2900	6053	NNE	2506	Yes
KLD	AFS 160/INS/PB	2900	5476	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	62.4	0.00
INT-PB	Internal Plasterboard Stud Wall	67.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No
BED 2	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No
KLD	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 2	1	Exhaust Fan	350	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Minimum Fuel Type efficiency / performance	Recommended capacity



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-JD5BRB-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A106, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	72.7	Suburban	
Unconditioned*	4.5	NatHERS climate zone	
Total	77.2	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	3.6	4.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-JD5BRB-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

9.7	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approva	l stage	Construc stage	tion	CURCE ADDRESS ASTRON
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.7 Star Rating as of 10 Apr 2024



ertificate check Approval stage		stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.10
STUDY	Day Time	2.48
BED 1	Bedroom	13.53
ENS 1	Night Time	5.07
BED 2	Bedroom	10.47
BATH	Unconditioned	4.50

Window and glazed door type and performance

Default* windows

Window ID	Window Description		SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC sub tolerance	stitution ranges
				lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.27	2800	2400	Awning	27	NNE	None
BED 2	ATB-004-02 B	1.25	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-02 B	1.24	2900	3800	Sliding	60	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Description	I			Maximum	SHGC*	SHGC sub tolerance	ostitution ranges
						U-value*		lower limit	upper limit
None									
Custom* roo	f windows								
Window ID	Wind	w Description				Maximum	⁾ енес*	SHGC sub tolerance	stitution ranges
Window ib	Wind					U-value*	01100	lower limit	upper limit
None									
Roof win	dow sch	nedule							
Location	Wind ID	wob	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	NCC Skylight de	scription					
None			Okylight de	scription					
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	Shaft Reflee	ctance
None									
External	door sci	hedule							
Location			Height	(mm)	Width (m	m) Oj	pening %	Orien	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	W rptance Co	all olour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm I	CF/INS/PB		0.50	M	edium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadii projeo	ontal ng feature* ction (mm)	Vertical shading feature

2900

2855

NNE

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

BED 1

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2943	NNE	1525	Yes
BED 2	AFS 160/INS/PB	2900	3559	ESE		Yes
BED 2	AFS 160/INS/PB	2900	880	WNW	4060	Yes
KLD	AFS 160/INS/PB	2900	4017	NNE	2405	Yes
KLD	AFS 160/INS/PB	2900	101	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.0	0.00
INT-PB	Internal Plasterboard Stud Wall	52.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.0	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction			E i (Bulk nsulation R-value)	Reflective wrap*
None						
Ceiling penetrations*						
Location	c	Quantity	Туре	Diameter	s (mm) /۱	ealed Insealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 × 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım	معمعمط

		Hot	Minimum	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре	
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-DQXY4F-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A107, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	99.3	Suburban			
Unconditioned*	4.6	NatHERS climate zone			
Total	103.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	2.0	8.0		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-DQXY4F-01. When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



9.3	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approval stage		Construction stage		HOUSE base how when
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied CC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	51.64
HALL	Day Time	4.58
BED 1	Bedroom	13.29
ENS 1	Night Time	4.75
BED 2	Bedroom	11.93
BED 3	Bedroom	13.12
BATH	Unconditioned	4.57

Window and glazed door type and performance

Default* windows

Window ID	dow ID Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum SF	HGC*	SHGC substitution tolerance ranges		
		U-value*	•	lower limit	upper limit	
None						

Window and glazed door schedule

•								
Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	1.30	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-02 B	1.29	2900	2400	Sliding	45	NNE	None
BED 3	ATB-004-01 B	1.32	2800	2750	Sliding	22	E	None


Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-01 B	1.31	970	900	Fixed	0	ESE	None
KLD	ATB-004-02 B	1.28	2900	4200	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3006	NNE		Yes
BED 1	AFS 160/INS/PB	2900	3896	ESE		Yes
BED 2	AFS 160/INS/PB	2900	3309	NNE		Yes
BED 2	AFS 160/INS/PB	2900	1497	WNW		Yes
BED 3	AFS 160/INS/PB	2900	2625	SSW	9065	Yes
BED 3	AFS 160/INS/PB	2900	2776	E		Yes
BED 3	AFS 160/INS/PB	2900	1054	S		Yes
ENS 1	AFS 160/INS/PB	2900	2575	ESE		Yes
KLD	AFS 160/INS/PB	2900	4395	NNE		Yes
KLD	AFS 160/INS/PB	2900	2205	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	59.9	0.00
INT-PB	Internal Plasterboard Stud Wall	75.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.15	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	2.50	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	51.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
HALL	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
Ceiling fans				

Location Quantity Diameter (mm) None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
				Minimum	Recommended
Туре	Location	I	Fuel Type	efficiency / performance	capacity
No Whole of Home Data					
Hot water system					
_		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	nended
Туре	Fuel type	efficiency / performanc	e	capacity	1
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k\	/]
No Whole of Home Data					
Battery schedul	e				

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-DXSZTZ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A108, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	77.4	Suburban	
Unconditioned*	4.8	NatHERS climate zone	
Total	82.2	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	26.4	4.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-DXSZTZ-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A108, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

ATION VIEN

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



6.8 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ rveyor checked	ilder checked	onsent authority/ rveyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	Sul Sul	Bu	Sul	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.8 Star Rating as of 10 Apr 2024



ertificate check Approv		Approval stage		Construction stage	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessn	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	39.20
BED 1	Bedroom	15.78
ENS 1	Night Time	5.28
BED 2	Bedroom	10.63
STUDY	Day Time	6.54
BATH	Unconditioned	4.81

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
	· · · · · · · · · · · · · · · · · · ·	U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	1.35	2900	1600	Double Hung	45	ESE	None
BED 2	ATB-004-02 B	1.34	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-02 B	1.33	2900	3800	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID Wind		ow Descriptior	1			Maximum		SHGC sub tolerance	stitution ranges
		·				U-value*		lower limit	upper limit
None									
Custom* roc	of windows								
Window ID	Wind	ow Description	1			Maximum	SHGC*	SHGC sub tolerance	stitution ranges
			•			U-value*	enee	lower limit	upper limit
None									
Roof wir	ndow sch	hedule							
Location	Wind ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	INCE Skylight de	ecription					
None			Skylight de	scription					
Location None	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area ((m²) a	Drient- ation	Outdoor shade	Diffuse	Shaft r Reflec	ctance
External	door sc	hedule							
Location			Height	: (mm)	Width (mi	m) Op	ening %	Orien	tation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	Wa ptance Co	all blour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	/PB	AFS 160mm	FCF/INS/PB		0.50	Me	edium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadi projeo	ontal ng feature* ction (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	РВ	2900	1778	ESE	2512		Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	373	SSW	3853	Yes
BED 2	AFS 160/INS/PB	2900	2987	ESE	1041	Yes
BED 2	AFS 160/INS/PB	2900	1429	NNE	3842	Yes
BED 2	AFS 160/INS/PB	2900	1475	SSW	1641	Yes
KLD	AFS 160/INS/PB	2900	4013	ESE	2467	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.4	0.00
INT-PB	Internal Plasterboard Stud Wall	66.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.15	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.0	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
DATH	1	Downlight	100	Socied
BATH	I	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					
Pool / spa equipment					
		Minimum	Re	commended	

Tuno	Fuel type	officionev/	Recommended
туре	Fuertype	eniciency /	canacity
		performance	capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-996BMZ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A109, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type				
Conditioned* 76.6		Suburban				
Unconditioned*	4.9	NatHERS climate zone				
Total	81.5	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.8	8.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-996BMZ-01</u>. When using either link.

http://www.hero-software.





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:

Cost:







#HR-996BMZ-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	ge Construction stage		CARE'S AND STORE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.12
BED 1	Bedroom	14.67
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	4.89

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.38	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-01 B	1.37	2800	2400	Sliding	22	SE	None
KLD	ATB-004-02 B	1.36	2900	3800	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	1			Maximu	^m SHGC	SHGC substitut	
		•				U-value	*	lower limit	upper limit
None									
Custom* room	f windows								
Window ID	Wind	ow Description	1			Maximu	^m SHGC ³	SHGC sub tolerance	stitution ranges
			•			U-value	* 01100	lower limit	upper limit
None									
Roof win	dow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	· Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	d performa	INCE Skylight de	scription					
None				•					
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffus	er Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) (Opening %	orier	ntation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm	FCF/INS/PB		0.50	l	Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	t- Hori shac proje	zontal ling feature* ection (mm)	Vertical shading feature

2900

ESE

1804

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A109, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1271	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2864	NNE	3910	Yes
BED 2	AFS 160/INS/PB	2900	2787	SE		Yes
KLD	AFS 160/INS/PB	2900	4005	ESE	2893	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	78.3	0.00
INT-PB	Internal Plasterboard Stud Wall	51.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
					Minimum	Pacammandad
Туре	Location			Fuel Type	efficiency / performance	capacity
No Whole of Home Data						
Hot water system						
			Hot	Minir	num	Assessed
Туре		Fuel type	Water	effici	ency /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A109, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-O3FFRI-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A110, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	71.9	Suburban			
Unconditioned*	6.3	NatHERS climate zone			
Total	78.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.4	7.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-O3FFRI-01.

When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-O3FFRI-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	insent authority/ rveyor checked	ilder checked	insent authority/ rveyor checked	:cupancy/other
It is not mandatory to complete this checklist.	As	CO	Bu	Sur	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		IndeX's scine. In sec
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	3.14
KLD	Kitchen/Living	38.25
BED 1	Bedroom	14.66
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	6.35

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	U-value		onee	lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.41	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-02 B	1.40	2900	2256	Sliding	45	SE	None
KLD	ATB-004-02 B	1.39	2900	3915	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	1			Maximu	um * SHGC	SHGC sub * tolerance	ostitution ranges
						U-value)	lower limit	upper limit
None									
Custom* roof	windows							SHGC sut	ostitution
Window ID	Wind	ow Descriptior	ı			Maximu U-value	um SHGC	* tolerance	ranges
						0-value	•	lower limit	upper limit
None									
Roof win	dow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient ation	- Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	d performa	INCE Skylight des	scription					
None				•					
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffus	ser Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m)	Opening %	% Orier	itation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	РΒ	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orier ation	nt- Hori shao proj	zontal ding feature* ection (mm)	Vertical shading feature

2900

ESE

1804

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A110, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1284	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	NNE		Yes
BED 2	AFS 160/INS/PB	2900	2664	SE	2945	Yes
KLD	AFS 160/INS/PB	2900	4024	ESE	2612	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	85.6	0.00
INT-PB	Internal Plasterboard Stud Wall	57.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

7.4 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)	
None			

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

....



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recom capacit	mended Y
No Whole of Home Data					

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-UMTZ6X-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A111, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type	
Conditioned*	76.1	Suburban	
Unconditioned*	6.2	NatHERS climate zone	
Total	82.3	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	27.3	7.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-UMTZ6X-01. When using either link, ensure you are visiting http://www.hero-software. com.au




About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



6.4 Star Rating	as c	of 10 /	Apr 2	2024
-----------------	------	---------	-------	------



Certificate check	Approva	l stage	Construc stage	EVALUATION OF THE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	isent authority/ /eyor checked	der checked	isent authority/ /eyor checked	upancy/other
It is not mandatory to complete this checklist.	Ass	Con	Buil	Con sur	000
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.4 Star Rating as of 10 Apr 2024



Certificate check Approval stage		ge Construction stage		Indeko akino, Kustak	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	tisfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	4.21
KLD	Kitchen/Living	34.40
STUDY	Day Time	7.48
BED 1	Bedroom	14.46
ENS 1	Night Time	4.78
BATH	Unconditioned	6.16
BED 2	Bedroom	10.79

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit	
None					

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-01 B	1.43	2900	2400	Sliding	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A111, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.44	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	1.47	2800	3000	Awning	29	SSW	None
ENS 1	ATB-004-01 B	1.45	970	900	Fixed	0	SSW	None
KLD	ATB-004-03 B	1.42	2900	3702	Sliding	60	ESE	None
STUDY	ATB-003-03 B	1.46	2800	2497	Awning	29	SSW	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
				lower limit upper limit
None				

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description		
None			

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	1972	Yes
BED 1	AFS 160/INS/PB	2900	3802	SSW		Yes
BED 1	AFS 160/INS/PB	2900	1529	NNE	3957	Yes
BED 2	AFS 160/INS/PB	2900	3599	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW		Yes
ENS 1	AFS 160/INS/PB	2900	2663	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	ESE	3501	Yes
STUDY	AFS 160/INS/PB	2900	2497	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	43.8	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	ocation		uantity	Diameter (mm)		ım)
None						
Roof type						
Construction		Ad ins (R	lded sulation -value)	Solar absorptance		Roof Colour
None						
Thermal brid	lging schedule for stee	l frame elements	5			
Building element	Steel section dimensions (height x width. mm)	Frame spacing (mm)	Steel th (BMT m	nickness nm)	The (R-)	rmal Break /alue)

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A111, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommende capacity	d
No Whole of Home Data						
Heating system						
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommende capacity	d
No Whole of Home Data				•		
Hot water system		Hot	Minim		Assessed	
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency performar	/ nce	Recomr capacity	nended /	
No Whole of Home Data						
Onsite Renewa	ble Energy schedu	le				

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-SZQS85-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A201, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	78.0	Suburban			
Unconditioned*	4.2	NatHERS climate zone			
Total	82.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	12.5	8.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-SZQS85-01</u>. When using either link, ensure you are visiting http://www.hero-software.



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:







#HR-SZQS85-01 NatHERS Certificate

8.0 Star Rating as of 10 Apr 2024



ertificate check		Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	insent authority/ rveyor checked	ilder checked	insent authority/ rveyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	CO Sul	Bu	Sul Co	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.0 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	INVERCE BARRING, SCIENCE
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.36
KLD	Kitchen/Living	35.58
BED 1	Bedroom	14.50
ENS 1	Night Time	5.75
BED 2	Bedroom	10.85
BATH	Unconditioned	4.25

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-003-01 B	2.06	2800	600	Awning	58	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.05	2800	700	Awning	58	SSW	None
BED 1	ATB-004-02 B	2.04	2900	2400	Sliding	45	WNW	None
BED 2	ATB-003-01 B	2.08	2800	3000	Awning	29	SSW	None
ENS 1	ATB-004-01 B	2.07	970	900	Fixed	0	SSW	None
KLD	ATB-004-03 B	2.02	2900	4000	Sliding	60	WNW	None
KLD	ATB-003-03 B	2.03	2900	1200	Sliding	58	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	· · · · · · · · · · · · · · · · · · ·	U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID Window Description	Maximum	SHGC*	SHGC sub tolerance r	stitution ranges	
		U-value*		lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4141	SSW		Yes
BED 1	AFS 160/INS/PB	2900	2997	WNW	3080	Yes
BED 2	AFS 160/INS/PB	2900	3620	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	ESE		Yes
ENS 1	AFS 160/INS/PB	2900	3201	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1499	SSW	3168	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	47.3	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.15	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location		C	uantity	Diameter (mm)	
None					
Roof type					
Construction		A ir (I	dded nsulation R-value)	Solar absorptance	Roof Colour
None					
Thermal brid	ging schedule for stee	l frame element	'S		
Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel th (BMT n	nickness T nm) (hermal Break R-value)

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		llot	Minim		Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performan	/ Ice	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-AS2HUD-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	83.8	Suburban			
Unconditioned*	4.3	NatHERS climate zone			
Total	88.1	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1		
State/Territory variation	Yes		

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	15.3	5.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-AS2HUD-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.9 Star	Rating	as of	10	Apr	2024
----------	--------	-------	----	-----	------



Certificate check	Approval stage		Construction stage		ANDREA RAVIENS READM
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.9 Star Rating as of 10 Apr 2024



Certificate check	ate check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.86
KLD	Kitchen/Living	32.04
BED 1	Bedroom	15.87
BED 2	Bedroom	10.82
BATH	Unconditioned	4.28
ENS 1	Night Time	5.25

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.12	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	2.11	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	2.09	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	2.10	2900	1500	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Descriptior	I			Maximu U-value	* SHGC*	SHGC sub tolerance	ostitution ranges
						0-value		lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	\0 /5 in al					Maximu	m succt	SHGC sub tolerance	stitution ranges
	wina	ow Description				U-value	* 2000	lower limit	upper limit
None									
Roof wir	ndow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	nce						
Skylight ID			Skylight de	scription					
none									
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	: (mm)	Width (m	m) (Opening %	Orier	itation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	ptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	t- shadii projec	ontal ng feature* ction (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	°B	2900	1448	WNW	269		Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3298	Yes
BED 2	AFS 160/INS/PB	2900	2287	NNE	281	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1717	NNE	3380	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.4	0.00
INT-PB	Internal Plasterboard Stud Wall	64.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
	Location	Location Fuel Type	Location Fuel Type Minimum Location Fuel Type efficiency / performance Location Fuel Type Minimum efficiency / performance performance



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım A	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-LC6XUO-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A203, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned* 83.4		Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	87.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.8	6.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-LC6XUO-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



certificate.

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check			·		·	
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor		'	·	'	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		INTER AUTOR COMM
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.87
KLD	Kitchen/Living	32.05
BED 1	Bedroom	15.82
BED 2	Bedroom	10.91
BATH	Unconditioned	4.28
ENS 1	Night Time	4.75

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.16	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	2.15	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	2.13	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	2.14	2900	1500	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	Window Description			Maximu	um * SHGC*	SHGC substitution tolerance ranges		
					U-value) "	lower limit	upper limit	
None									
Custom* roo	of windows							SHGC sub	stitution
Window ID	Windo	ow Description	I			Maximu U-value	um SHGC*	tolerance	ranges
None								lower limit	upper limit
Roof win	ndow sch	nedule							
Location	Wind ID	wol	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None					, , ,				
Skylight	type and	l performa	nce Skylight de	scription					
None			Skylight de	scription					
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	Shaft Reflec	ctance
None									
External	door sci	hedule							
Location			Height	(mm)	Width (mi	m)	Opening %	Orien	tation
None									
External	wall type	e							
Wall ID		Wall Type			Solar absor	ptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	/PB-A	AFS 160mm I	FCF/INS/PB		0.30		Light	3.00	No
AFS 160/INS	/PB-B	AFS 160mm I	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	edule							
				Hoight	Width	Orio	Horizo	ontal	Vertical

Location	Wall ID	(mm)	(mm)	ation	shading feature* projection (mm)	shading feature

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB-B	2900	1448	WNW	253	Yes
BED 2	AFS 160/INS/PB-B	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB-B	2900	2276	SSW	293	Yes
KLD	AFS 160/INS/PB-A	2900	4024	WNW		Yes
KLD	AFS 160/INS/PB-B	2900	1703	SSW	3392	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.4	0.00
INT-PB	Internal Plasterboard Stud Wall	64.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed


Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	um A	ssessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре	
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-5W5QR3-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	50.5	Suburban			
Unconditioned*	7.1	NatHERS climate zone			
Total	57.6	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	12.2	5.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-5W5QR3-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate. 8.3 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	7.29
KLD	Kitchen/Living	32.01
BED 1	Bedroom	11.24
BATH	Unconditioned	7.09

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum	Maximum U-value* SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	2.19	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	2.17	2900	3600	Sliding	60	WNW	None
KLD	ATB-003-03 B	2.18	2900	1200	Awning	58	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Descriptio	ription Maxim	ription Maxim	cription Maxim	escription Maximu	scription Maxim		iption Maxin		I		Maximum		^m SHGC*	SHGC sub tolerance	stitution ranges
						0-value*		lower limit	upper limit								
None																	
Custom* roof	windows					Maximur	n auget	SHGC sub	stitution								
	vvinac	ow Descriptio	n			U-value*	SHGC	lower limit	upper limit								
None																	
Roof win	dow sch	nedule															
Location	Wind ID	wot	Window no.	Openin %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade								
None																	
Skylight	type and	l performa	ance														
Skylight ID None			Skylight de	scription													
Skylight	schedule	ò															
Location None	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflec	ctance								
External	door scl	hedule															
None			Height	(mm)	Width (m	im) C	pening %	Orien	tation								
External	wall type	9															
Wall ID		Wall Type			Sola abso	r V vrptance C	Vall Colour	Bulk insulation (R-value)	Reflective wall wrap*								
								(IX-Value)	map								

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	WNW	3061	Yes
KLD	AFS 160/INS/PB	2900	3643	WNW	1570	Yes
KLD	AFS 160/INS/PB	2900	1491	NNE	2771	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	82.1	0.00
INT-PB	Internal Plasterboard Stud Wall	24.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.15	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location Quantity Diameter (mm)
None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um A	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy/ c [laily load litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performanc	e	Recommo capacity	ended

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-65PH2J-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A205, 116-120 Frenchs Forest Rd ; Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	73.2	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	77.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	6.3	12.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-65PH2J-01.

When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-65PH2J-01 NatHERS Certificate

8.2 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approval stage		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type table' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		<u></u>	<u></u>		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		bulker liketik, al-fabil
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	5.48
KLD	Kitchen/Living	31.01
ENS 1	Night Time	4.41
BATH	Unconditioned	4.06
BED 1	Bedroom	12.28
BED 2	Bedroom	13.58
HALL	Day Time	6.45

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	·····	U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.22	1900	2400	Awning	45	WNW	None
BED 2	ATB-003-01 B	2.23	1900	2400	Awning	45	WNW	None
KLD	ATB-004-02 B	2.20	2900	6000	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-003-01 B	2.21	2800	1100	Awning	58	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof win	dows					

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges
		U-value*		lower limit upper limit
None				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3009	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2538	SSW	6925	Yes
KLD	AFS 160/INS/PB	2900	6027	NNE	2531	Yes
KLD	AFS 160/INS/PB	2900	5478	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	62.4	0.00
INT-PB	Internal Plasterboard Stud Wall	67.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed

8.2 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 2	1	Exhaust Fan	350	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Minimum Fuel Type efficiency / performance	Recommended capacity



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore (horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore that achieves an at taze orenergy value? Op	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the will colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.abters.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not hava a diff	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Stading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-4YMM55-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A206, 116-120 Frenchs Forest Rd ; Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type	
Conditioned*	72.7	Suburban	
Unconditioned*	4.5	NatHERS climate zone	
Total	77.2	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	3.9	4.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-4YMM55-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A206, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:

Cost:







9.6 Star Rating as of 10 Ap	r 2024
-----------------------------	--------



Certificate check	Approva	l stage	Construc stage	tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sssor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.6 Star Rating as of 10 Apr 2024



ertificate check		stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging											
Does the dwelling meet the NCC requirement for thermal bridging?											
Insulation installation method											
Has the insulation been installed according to the NCC requirements?											
Building sealing											
Does the dwelling meet the NCC requirements for Building Sealing?											
Whole of Home performance check (not applicable if a Whole of Home assessment is not conducted)											
Appliances											
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?											
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?											
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?											
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?											
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?											
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)									
Does the lighting meet the artificial lighting requirements specified in the NCC?											
Does the hot water system meet the additional requirements specified in the NCC?											
Provisional values* check											
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?											
Other NCC requirements											
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC						



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.10
STUDY	Day Time	2.48
BED 1	Bedroom	13.53
ENS 1	Night Time	5.07
BED 2	Bedroom	10.47
BATH	Unconditioned	4.50

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.27	2800	2400	Awning	27	NNE	None
BED 2	ATB-004-02 B	2.25	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-02 B	2.24	2900	3800	Sliding	60	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Descriptior	1			Maximum	SHGC*	SHGC sub tolerance	estitution ranges
						U-value*		lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	Wind					Maximum	SHCC*	SHGC sub tolerance	stitution ranges
WINdow ID	wind	bw Description	1			U-value*	3000	lower limit	upper limit
None									
Roof win	ndow sch	nedule							
Location	Winc ID	low	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	l performa	INCE Skylight de	scription					
None									
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Refle	ctance
None									
External	door scl	hedule							
Location			Height	(mm)	Width (mi	m) Op	pening %	Orien	itation
None									
External	wall type	Э							
Wall ID		Wall Type			Solar absor	Wa ptance Co	all blour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	/PB	AFS 160mm	FCF/INS/PB		0.50	Me	edium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature

* Refer to glossary.

AFS 160/INS/PB

BED 1

2900

2855

NNE

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2943	NNE	1549	Yes
BED 2	AFS 160/INS/PB	2900	3559	ESE		Yes
BED 2	AFS 160/INS/PB	2900	880	WNW	4060	Yes
KLD	AFS 160/INS/PB	2900	4017	NNE	2429	Yes
KLD	AFS 160/INS/PB	2900	101	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.0	0.00
INT-PB	Internal Plasterboard Stud Wall	52.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.1	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
NL			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım d	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-BKQGK0-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A207, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024			
Prepared by	Brewster Murray			

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	99.3	Suburban			
Unconditioned*	4.6	NatHERS climate zone			
Total	103.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.2	5.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-BKQGK0-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A207, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATION WIDE HOLDUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	oancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse	Builde	Conse surve	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					
8.4 Star Rating as of 10 Apr 2024



Prtificate check Approval stage		stage	Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	51.64
HALL	Day Time	4.58
BED 1	Bedroom	13.29
ENS 1	Night Time	4.75
BED 2	Bedroom	11.93
BED 3	Bedroom	13.12
BATH	Unconditioned	4.57

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	tolerance ranges		
	·····	U-value*	lower limit upper limit		
None					

Window and glazed door schedule

•								
Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	2.30	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-02 B	2.29	2900	2400	Sliding	45	NNE	None
BED 3	ATB-004-01 B	2.32	2800	2750	Sliding	22	E	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-01 B	2.31	970	900	Fixed	0	ESE	None
KLD	ATB-004-02 B	2.28	2900	4200	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3006	NNE	1538	Yes
BED 1	AFS 160/INS/PB	2900	3896	ESE		Yes
BED 2	AFS 160/INS/PB	2900	3309	NNE	1538	Yes
BED 2	AFS 160/INS/PB	2900	1497	WNW	4599	Yes
BED 3	AFS 160/INS/PB	2900	2625	SSW	9065	Yes
BED 3	AFS 160/INS/PB	2900	2776	Е		Yes
BED 3	AFS 160/INS/PB	2900	1054	S		Yes
ENS 1	AFS 160/INS/PB	2900	2575	ESE		Yes
KLD	AFS 160/INS/PB	2900	4395	NNE	3035	Yes
KLD	AFS 160/INS/PB	2900	2205	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	59.9	0.00
INT-PB	Internal Plasterboard Stud Wall	75.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	51.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
HALL	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimi efficiei STC	um A ncy/d	Assessed laily load litres]
No Whole of Home Data	3				-
Pool / spa equipment	:	Minimum			
Туре	Fuel type	efficiency / performance		Recommo capacity	ended
No Whole of Home Data	3				
Onsite Renewa	able Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	ני
No Whole of Home Data	3				
Pattony schody	ulo				

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A207, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-59WWHD-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A208, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type				
Conditioned*	77.4	Suburban				
Unconditioned*	4.8	NatHERS climate zone				
Total	82.2	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

Volume 1

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	23.8	5.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-59WWHD-01</u>. When using either link, ensure you are visiting

http://www.hero-software.

com.au





Note, variations and additions to the NCC energy efficiency requirements Predicted Whole of Home annual may apply in some states and territories.

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:

Cost:





7.1 Star Rating as of 10 Apr 2024



Certificate check	Approva	stage	Construction stage			
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	er checked	ent authority/ /or checked	ancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse surve)	Builde	Conse surve)	Occup	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> ' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.1 Star Rating as of 10 Apr 2024



Certificate check Approval stage		stage Construction stage			
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	39.20
BED 1	Bedroom	15.78
ENS 1	Night Time	5.28
BED 2	Bedroom	10.63
STUDY	Day Time	6.54
BATH	Unconditioned	4.81

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	2.35	2900	1600	Double Hung	45	ESE	None
BED 2	ATB-004-02 B	2.34	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-02 B	2.33	2900	3700	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	low Descriptior	1			Maximum	Maximum SHGC*		SHGC substitution tolerance ranges	
						U-value*		lower limit	upper limit	
None										
Custom* roo	of windows									
Window ID		law Decerintia	_			Maximum		SHGC sub tolerance	stitution ranges	
window ID	wind	low Description	1			U-value*	SIGC	lower limit	upper limit	
None										
Roof wir	ndow sci	hedule								
Location	Win ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None										
Skylight	type and	d performa	INCE Skylight de	escription						
None			okyngnt de	scription						
Skylight	schedul	e								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Refle	ctance	
None			,							
External	door so	hedule								
Location			Height	(mm)	Width (m	m) O	pening %	Orien	itation	
None										
External	wall typ	<i>e</i>								
Wall ID		Wall Type			Solar absor	W rptance C	/all olour	Bulk insulation (R-value)	Reflective wall wrap*	
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50	М	edium	3.00	No	
External	wall scl	hedule								
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature	
BED 1		AFS 160/INS/F	ЪВ	2900	1778	ESE	2512		Yes	

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A208, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	373	SSW	3861	Yes
BED 2	AFS 160/INS/PB	2900	2987	ESE	1041	Yes
BED 2	AFS 160/INS/PB	2900	1429	NNE	3842	Yes
BED 2	AFS 160/INS/PB	2900	1475	SSW	1641	Yes
KLD	AFS 160/INS/PB	2900	4013	ESE	2467	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.4	0.00
INT-PB	Internal Plasterboard Stud Wall	66.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.2	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
News			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	um	Assassad

		ΠΟΙ	Winnun	Assesseu	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
· · · · · · · · · · · · · · · · · · ·			

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре	
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-36AVG4-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A209, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	76.6	Suburban	
Unconditioned*	4.9	NatHERS climate zone	
Total	81.5	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.2	9.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-36AVG4-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A209, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-36AVG4-01 NatHERS Certificate

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.3 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.12
BED 1	Bedroom	14.67
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	4.89

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum		SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC subs tolerance r	stitution anges
		U-value*	enee	lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.38	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-01 B	2.37	2800	2400	Sliding	22	SE	None
KLD	ATB-004-02 B	2.36	2900	3800	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Description	cription Maxim		Description Maximum St		Maxir		ⁿ SHGC*	SHGC sub tolerance	estitution ranges
						U-value*		lower limit	upper limit		
None											
Custom* roo	of windows										
Window ID	Wind	ow Description	n			Maximun	n SHGC*	SHGC sub tolerance	stitution ranges		
	•••••					U-value*	01100	lower limit	upper limit		
None											
Roof win	dow sci	hedule									
Location	Win ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade		
None											
Skylight Skylight ID	type and	d performa	ANCE Skylight de	scription							
None											
Skylight	schedul	е									
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Refle	ctance		
None											
External	door sc	hedule									
Location			Height	(mm)	Width (m	m) O	pening %	Orier	tation		
None											
External	wall typ	e									
Wall ID		Wall Type			Solar absor	W rptance C	Vall Solour	Bulk insulation (R-value)	Reflective wall wrap*		
AFS 160/INS/	/PB	AFS 160mm	FCF/INS/PB		0.50	N	ledium	3.00	No		
External	wall scl	nedule									
Location		Wall ID		Height (mm)	Width (mm)	Orient ation	- shadii projec	ontal ng feature* ction (mm)	Vertical shading feature		

2900

ESE

1804

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A209, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1271	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2864	NNE	3915	Yes
BED 2	AFS 160/INS/PB	2900	2787	SE		Yes
KLD	AFS 160/INS/PB	2900	4005	ESE	2893	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	78.3	0.00
INT-PB	Internal Plasterboard Stud Wall	51.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					-	
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ncy /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A209, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-8QNPOS-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A210, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	71.9	Suburban		
Unconditioned*	6.3	NatHERS climate zone		
Total	78.3	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.6	8.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-8QNPOS-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A210, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MATION WIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.4 Star Rating as of 10 Apr 2024



Certificate check		Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Consi surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the <i>'Onsite Renewable Energy schedule'</i> on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	3.14
KLD	Kitchen/Living	38.25
BED 1	Bedroom	14.66
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	6.35

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*	onee	lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
		U-value*	•	lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.41	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-02 B	2.40	2900	2256	Sliding	45	SE	None
KLD	ATB-004-02 B	2.39	2900	3905	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	Vindow Description			Maximur	^m SHGC*	SHGC substitution tolerance ranges		
						U-value*		lower limit	upper limit
None									
Custom* roc	of windows								
Window ID	Mind	our Decerintier				Maximur	n succ*	SHGC sub tolerance	stitution ranges
window iD	vvindo	ow Description				U-value*	SHGC	lower limit	upper limit
None									
Roof wir	ndow sch	nedule							
Location	Wind ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None					. ,	. ,			
Skylight	type and	l performa	nce						
Skylight ID			Skylight de	scription					
None									
Skylight	schedule	e							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflee	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (mi	m) C	Opening %	Orien	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	v rptance C	Vall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	i/PB	AFS 160mm I	FCF/INS/PB		0.50	Ν	ledium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height	Width	Orient	Horizo	ontal	Vertical
Location				(mm)	(mm)	ation	projec	tion (mm)	feature
BED 1		AFS 160/INS/F	B	2900	1804	ESE			Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A210, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1284	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	NNE		Yes
BED 2	AFS 160/INS/PB	2900	2664	SE	3030	Yes
KLD	AFS 160/INS/PB	2900	4024	ESE	2612	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	85.6	0.00
INT-PB	Internal Plasterboard Stud Wall	57.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

7.4 Star Rating as of 10 Apr 2024



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					-	
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ncy /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A210, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recom capacity	mended Y
No Whole of Home Data					

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]


Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-ZQ2OA5-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A211, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	76.1	Suburban
Unconditioned*	6.2	NatHERS climate zone
Total	82.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	29.0	7.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-ZQ2OA5-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A211, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:

Cost:







6.2	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approva	Approval stage sta		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	4.21
KLD	Kitchen/Living	34.40
STUDY	Day Time	7.48
BED 1	Bedroom	14.46
ENS 1	Night Time	4.78
BATH	Unconditioned	6.16
BED 2	Bedroom	10.79

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum S	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit u	pper limit	
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
Location	ID	no.	(mm)	(mm)	type	%	ation	device*

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A211, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	2.43	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	2.44	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	2.48	2800	3000	Awning	29	SSW	None
BED 2	ATB-004-04 B	2.47	2800	800	Fixed	0	SSW	None
ENS 1	ATB-004-01 B	2.45	970	900	Fixed	0	SSW	None
KLD	ATB-004-03 B	2.42	2900	3802	Sliding	60	ESE	None
STUDY	ATB-003-03 B	2.46	2800	2497	Awning	29	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	1972	Yes
BED 1	AFS 160/INS/PB	2900	3802	SSW		Yes
BED 1	AFS 160/INS/PB	2900	1529	NNE	3957	Yes
BED 2	AFS 160/INS/PB	2900	3599	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW		Yes
ENS 1	AFS 160/INS/PB	2900	2663	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	ESE	3501	Yes
STUDY	AFS 160/INS/PB	2900	2497	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	43.8	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
STUDY	1	1400



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um	Assessed
Туре	Fuel type	Water	efficie	n cy /	daily load
		CER Zone	STC		[litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	mended
Туре	Fuel type	efficiency / performance	9	capacity	/
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k	w]
					-

No Whole of Home Data

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-D3H1PM-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	78.0	Open			
Unconditioned*	4.2	NatHERS climate zone			
Total	82.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.2	6.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-D3H1PM-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



7.4 Star Rating as of 10 Apr 2024



Cartificate check			Construc	tion	HIDS WIDE HERE'S ACTOR STREET
	Approva	l stage	stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	or checked	it authority/ or checked	checked	it authority/ or checked	incy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Assess	Conser surveyo	Builder	Conser surveyo	Occupa
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls		·	'	'	
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof		·	·	·	
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)		·	'	'	<u>.</u>
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.36
KLD	Kitchen/Living	35.58
BED 1	Bedroom	14.50
ENS 1	Night Time	5.75
BED 2	Bedroom	10.85
BATH	Unconditioned	4.25

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	•	U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
				lower limit upper limit
None				

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-003-01 B	3.06	2800	600	Awning	58	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.05	2800	700	Awning	58	SSW	None
BED 1	ATB-004-02 B	3.04	2900	2400	Sliding	45	WNW	None
BED 2	ATB-003-01 B	3.08	2800	3000	Awning	29	SSW	None
ENS 1	ATB-004-01 B	3.07	970	900	Fixed	0	SSW	None
KLD	ATB-004-03 B	3.02	2900	4000	Sliding	60	WNW	None
KLD	ATB-003-03 B	3.03	2900	1200	Sliding	45	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper limit	i	
None						

Custom* roof windows

Window ID	dow ID Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4141	SSW		Yes
BED 1	AFS 160/INS/PB	2900	2997	WNW	3080	Yes
BED 2	AFS 160/INS/PB	2900	3620	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	ESE		Yes
ENS 1	AFS 160/INS/PB	2900	3201	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1499	SSW	3168	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	47.3	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.15	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
_		Hot	Minim	ium	Assessed
Гуре	Fuel type	Water CER Zone	efficie STC	ency /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performanc	e	Recomm capacity	ended
No Whole of Home Data					

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-MJXYFG-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A302, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	83.1	Open			
Unconditioned*	4.3	NatHERS climate zone			
Total	87.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	18.6	6.1		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-MJXYFG-01. When using either link, ensure you are visiting http://www.hero-software. com.au



ATIONWIPE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.89
KLD	Kitchen/Living	32.04
BED 1	Bedroom	15.57
ENS 1	Night Time	4.80
BED 2	Bedroom	10.82
BATH	Unconditioned	4.28

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	U-valu			lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.12	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	3.11	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	3.09	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	3.10	2900	1500	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Window Description Maximu		Maximun	¹ SHGC∗	SHGC sub tolerance	ostitution ranges			
						U-value*		lower limit	upper limit
None									
Custom* roo	f windows								
Window ID	Wind	w Description				Maximun		SHGC sub tolerance	stitution ranges
WINDOWID	vvina	ow Description				U-value*	3160	lower limit	upper limit
None									
Roof win	dow sch	nedule							
Location	Wind ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	NCC Skylight de	scription					
None			Okylight de	scription					
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	Shaft Reflee	ctance
None									
External	door sci	hedule							
Location			Height	(mm)	Width (m	m) O	pening %	Orien	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	W rptance C	/all olour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm I	CF/INS/PB		0.50	Μ	edium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadii projeo	ontal ng feature* ction (mm)	Vertical shading feature

2900

1448

WNW

253

* Refer to glossary.

BED 1

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3298	Yes
BED 2	AFS 160/INS/PB	2900	2287	NNE	306	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1717	NNE	3405	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	85.0	0.00
INT-PB	Internal Plasterboard Stud Wall	63.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.6	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	ım	معمعمط

		HOT	winimum	Assessea	
Туре	Fuel type	Water	efficiency /	daily load	
		CER Zone	STC	[litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-0SVEZT-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A303, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type	
Conditioned*	83.4	Open	
Unconditioned*	4.3	NatHERS climate zone	
Total	87.6	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.0	4.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-0SVEZT-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-0SVEZT-01 NatHERS Certificate

|--|



Certificate check	Approva	l stage	Construc stage	- DEBUT REPAR ADDRESS	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.97
KLD	Kitchen/Living	32.05
BED 1	Bedroom	15.55
ENS 1	Night Time	4.88
BED 2	Bedroom	10.91
BATH	Unconditioned	4.28

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID V	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.16	2900	1200	Awning	58	WNW	None
BED 2	ATB-004-02 B	3.15	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	3.13	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	3.14	2900	1500	Sliding	45	SSW	None


Roof window type and performance value

Default* roof windows

Window ID	Wind	Window Description			Maximum	M SHGC*	SHGC substitution tolerance ranges		
						U-value	•	lower limit	upper limit
None									
Custom* roc	of windows							SHGC sub	ostitution
Window ID	Winde	ow Description	ı			Maximu U-value	* SHGC*	tolerance	ranges
								lower limit	upper limit
None									
Roof wir	ndow sch	nedule							
Location	Wind ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	l performa	INCE Skylight de	scription					
None			, ,						
Skylight	schedule	e							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) (Opening %	Orier	itation
None									
External	wall type	e							
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	/PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	it- shadi projec	ontal ng feature* ction (mm)	Vertical shading feature

2900

1448

WNW

237

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

BED 1

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3276	Yes
BED 2	AFS 160/INS/PB	2900	2276	SSW	293	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1572	Yes
KLD	AFS 160/INS/PB	2900	1703	SSW	3392	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	83.9	0.00
INT-PB	Internal Plasterboard Stud Wall	64.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.6	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Minimum Fuel Type efficiency / performan	, Recommend capacity ce



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-7505FE-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	50.6	Open		
Unconditioned*	7.1	NatHERS climate zone		
Total	57.7	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.3	5.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-7505FE-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MICONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-7505FE-01 NatHERS Certificate

7.7 Star Rating as of 10 Apr 2024

					NATIONWIDE HOUSE	
Certificate check		l stage	Construction stage			
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked	checked	uthority/ checked	ecked	tuthority/ checked	:y/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Assessor	Consent a surveyor o	Builder ch	Consent a surveyor o	Occupanc	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Floor type</i> ' table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the						

NatHERS-stamped	plans?



7.7 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	Partice Borrier, science
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessn	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	7.29
KLD	Kitchen/Living	32.04
BED 1	Bedroom	11.24
BATH	Unconditioned	7.09

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	3.19	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	3.17	2900	3600	Sliding	60	WNW	None
KLD	ATB-003-03 B	3.18	2900	1200	Awning	58	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	ow Description	n	Maximun		um * SHGC*	SHGC substitution tolerance ranges			
							U-value	,	lower limit	upper limit
None										
Custom* roof v	vindows									
							Maximi	Im	SHGC sub	stitution
Window ID	Windo	ow Description	n				U-value	SHGC*	lower limit	upper limit
None										
Roof wind	ow sch	nedule								
Location	Winc ID	low	Window no.	Openir %	ng	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None										
Skylight <i>ty</i>	vpe and	l performa	ANCE Skylight de	ecription						
None			okyngin de	Scription	•					
	- 11 - 1-									
Skylight S	Chedule Skylight	Skylight	Skylight chaft	Aroa	Ori	ont	Outdoor		Shaft	
Location I	D	No.	length (mm)	(m ²)	atio	on	shade	Diffuse	. Shan Reflec	ctance
None										
External d	oor scl	hedule	l la inde	()		/: -14 h. /		On online 0/	Orier	4 - 4i
Location			Height	(mm)	vv	lath (mi	m)	Opening %	Orien	tation
None										
None										
None External w	vall type	9								
None External w Wall ID	vall type) Wall Type				Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	WNW	3061	Yes
KLD	AFS 160/INS/PB	2900	3652	WNW	1570	Yes
KLD	AFS 160/INS/PB	2900	1491	NNE	2762	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	82.1	0.00
INT-PB	Internal Plasterboard Stud Wall	24.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.15	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
Ceiling fans				

Quantity

Diameter (mm)

None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

No Whole of Home Data

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					
Pool / spa equipment					
T	Free Life man	Minimum	Re	commended	

Type Fuel type efficiency / capacity capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-KHEEU7-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	73.3	Open			
Unconditioned*	4.1	NatHERS climate zone			
Total	77.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	5.7	12.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-KHEEU7-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

8.2	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approva	l stage	Construc stage	tion	and a reason around
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	lder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Bui	Cor sur	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Constructi stage		tion		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	5.48
KLD	Kitchen/Living	31.12
ENS 1	Night Time	4.41
BATH	Unconditioned	4.06
BED 1	Bedroom	12.26
BED 2	Bedroom	13.56
HALL	Day Time	6.45

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.22	1900	2400	Awning	45	WNW	None
BED 2	ATB-003-01 B	3.23	1900	2400	Awning	45	WNW	None
KLD	ATB-004-03 B	3.20	2900	6000	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-003-01 B	3.21	2800	1100	Awning	58	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof win	dows					

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2533	SSW	6925	Yes
KLD	AFS 160/INS/PB	2900	6062	NNE	2479	Yes
KLD	AFS 160/INS/PB	2900	5476	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	62.4	0.00
INT-PB	Internal Plasterboard Stud Wall	67.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 2	1	Exhaust Fan	350	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um A ncy / d	ssessed aily load itres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	9	Recomme capacity	ended
No Whole of Home Data		-			
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [kW]
No Whole of Home Data					
Battery schedul	e				
Туре		Storage Capacit	ty [kWh]		
No Whole of Home Data					



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-ALGL2B-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.7	Open
Unconditioned*	4.5	NatHERS climate zone
Total	77.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	5.9	4.8			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-ALGL2B-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



9.2 Star F	Rating as	of 10 /	Apr 2024
------------	-----------	---------	----------



Certificate check	Approva	l stage	Construc stage	EVALUATION OF THE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con	Build	Con surv	Occ
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.2 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	ment is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.10
STUDY	Day Time	2.48
BED 1	Bedroom	13.53
ENS 1	Night Time	5.07
BED 2	Bedroom	10.47
BATH	Unconditioned	4.50

Window and glazed door type and performance

Default* windows

Window IDWindow DescriptionATB-003-01 BAI Thermally Broken A	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	U-value	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.27	2800	2400	Awning	27	NNE	None
BED 2	ATB-004-02 B	3.25	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-02 B	3.24	2900	3800	Sliding	60	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Descriptior	1			Maximur	ⁿ SHGC*	SHGC sub tolerance	ostitution ranges
			-			U-value*		lower limit	upper limit
None									
Custom* roc	of windows								
Window ID	Wind	ow Description	1			Maximur	n SHGC*	shGC sub tolerance	ranges
						U-value*		lower limit	upper limit
None									
Roof wir	ndow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	INCE Skylight de	ecription					
None			Skylight de	scription					
Location	Schedun Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Refle	ctance
None									
External Location	door sc	hedule	Height	: (mm)	Width (mr	m) C	Opening %	Orier	ntation
Extornal		0							
Wall ID	wan typ	Wall Type			Solar absor	V ptance C	Vall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	i/PB	AFS 160mm	FCF/INS/PB		0.50	N	ledium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orient ation	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	PB	2900	2855	NNE			Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2943	NNE	1501	Yes
BED 2	AFS 160/INS/PB	2900	3559	ESE		Yes
BED 2	AFS 160/INS/PB	2900	880	WNW	4060	Yes
KLD	AFS 160/INS/PB	2900	4017	NNE	2381	Yes
KLD	AFS 160/INS/PB	2900	101	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.0	0.00
INT-PB	Internal Plasterboard Stud Wall	52.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.1	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Tuno	Diamotor (mm)	Sealed
Eocation	Quantity	туре	Diameter (mm)	/unsealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım A	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

	0,		
Туре	Orientatation	Generation Capacity [kW]	
No Whole of Home Data			

Storage Capacity [kWh]

Battery schedule

Туре	
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-4SA71K-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A307, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	99.3	Open	
Unconditioned*	4.6	NatHERS climate zone	
Total	103.9	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	4.5	8.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-4SA71K-01.

When using either link, ensure you are visiting http://www.hero-software. com.au


NATIONWIDE HOUSE HEAVENING WIDE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-4SA71K-01 NatHERS Certificate

8.9 Star I	Rating	as of	10	Apr	2024
------------	--------	-------	----	-----	------



Certificate check	Approva	l stage	Construc stage	Policy Lance of Source	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.9 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the <i>'Onsite Renewable Energy schedule'</i> on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	51.64
HALL	Day Time	4.58
BED 1	Bedroom	13.29
ENS 1	Night Time	4.75
BED 2	Bedroom	11.93
BED 3	Bedroom	13.12
BATH	Unconditioned	4.57

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·········	U-value*	•	lower limit	upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	3.30	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-02 B	3.29	2900	2400	Sliding	45	NNE	None
BED 3	ATB-004-01 B	3.32	2800	2750	Sliding	22	E	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-01 B	3.31	970	900	Fixed	0	ESE	None
KLD	ATB-004-02 B	3.28	2900	4200	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	· U-1	U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)		Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3006	NNE		Yes
BED 1	AFS 160/INS/PB	2900	3896	ESE		Yes
BED 2	AFS 160/INS/PB	2900	3309	NNE		Yes
BED 2	AFS 160/INS/PB	2900	1497	WNW		Yes
BED 3	AFS 160/INS/PB	2900	2625	SSW	9065	Yes
BED 3	AFS 160/INS/PB	2900	2776	E		Yes
BED 3	AFS 160/INS/PB	2900	1054	S		Yes
ENS 1	AFS 160/INS/PB	2900	2575	ESE		Yes
KLD	AFS 160/INS/PB	2900	4395	NNE		Yes
KLD	AFS 160/INS/PB	2900	2205	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	59.9	0.00
INT-PB	Internal Plasterboard Stud Wall	75.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	51.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
HALL	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um A ncy/ c [Assessed laily load litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recomm capacity	ended
No Whole of Home Data		-			
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [kW	/]
No Whole of Home Data					
Battery schedule	e				
Туре		Storage Capacity	r [kWh]		
No Whole of Home Data					



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-D62XHK-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A308, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024			
Prepared by	Brewster Murray			

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	77.4	Open			
Unconditioned*	4.8	NatHERS climate zone			
Total	82.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.4	6.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-D62XHK-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A308, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-D62XHK-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

ertificate check		Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		<u> </u>	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	39.20
BED 1	Bedroom	15.78
ENS 1	Night Time	5.28
BED 2	Bedroom	10.63
STUDY	Day Time	6.54
BATH	Unconditioned	4.81

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	3.35	2900	1778	Double Hung	45	ESE	None
BED 2	ATB-004-01 B	3.34	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-03 B	3.33	2900	3700	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	Window Description Maxim		Maximum	¹ SHGC*	SHGC substitution * tolerance ranges			
	U-value ²			U-value*		lower limit	upper limit		
None									
Custom* root	f windows								
Window ID	Wind	ow Description	ı			Maximum	¹ SHGC*	SHGC sub tolerance	ranges
		on 2000.iptio.				U-value*	Unee	lower limit	upper limit
None									
Roof win	dow sch	hedule							
Location	Wine ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	d performa	INCE Skylight de	scription					
None									
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Reflee	ctance
None									
External	door sc	hedule		(Origina	4-4
None			Height	(mm)	wiath (m	m) U	pening %	Orien	tation
Estern al									
External	wall typ	е						Bulk	Reflective
Wall ID		Wall Type			Solar absoi	W rptance C	/all olour	insulation (R-value)	wall wrap*
AFS 160/INS/	PB	AFS 160mm	FCF/INS/PB		0.50	М	edium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature

2900

1778

ESE

2512

* Refer to glossary.

BED 1

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	373	SSW	3831	Yes
BED 2	AFS 160/INS/PB	2900	2987	ESE	1041	Yes
BED 2	AFS 160/INS/PB	2900	1429	NNE	3842	Yes
BED 2	AFS 160/INS/PB	2900	1475	SSW	1641	Yes
KLD	AFS 160/INS/PB	2900	4013	ESE	2467	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	75.4	0.00
INT-PB	Internal Plasterboard Stud Wall	66.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.2	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Nama			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Hot water system				

		Hot	Minimum	Assessed
Туре	Fuel type	Water	efficiency /	daily load
		CER Zone	STC	[litres]
No Whole of Home Data				

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
· · · · · · · · · · · · · · · · · · ·			

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-HL43DJ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A309, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	76.6	Suburban
Unconditioned*	4.9	NatHERS climate zone
Total	81.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	16.7	10.1			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-HL43DJ-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A309, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



#HR-HL43DJ-01 NatHERS Certificate

7.3 Star Rating as of 10 Apr 2024

:	•••
į	NIDE SE

Certificate check	Approva	l stage	age Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ eyor checked	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor				-	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	todes for the streng
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	ment is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.12
BED 1	Bedroom	14.67
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	4.89

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	· U-value*	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
			•	lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.38	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-01 B	3.37	2800	2400	Sliding	22	SE	None
KLD	ATB-004-02 B	3.36	2900	3750	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Descriptior	ı			Maximu	^{IM} SHG	iC*	SHGC sub	stitution ranges
						U-value	• 		lower limit	upper limit
None										
Custom* roo	f windows								SHGC sub	stitution
Window ID	Wind	ow Descriptior	ı			Maximu U-value	* SHG	iC*	tolerance	ranges
None									lower limit	upper limit
Roof win	dow sch	hedule								
Location	Wine ID	dow	Window no.	Opening %	J Height (mm)	Width (mm)	Orie atior	nt- า	Outdoor shade	Indoor shade
None										
Skylight Skylight ID	type and	d performa	INCE Skylight de	scription						
None				-						
Skylight	aabadul	0								
Skylight	Skylight	C Skylight	Skylight shaft	Area	Orient-	Outdoor			Shaft	
Location	ID	No.	length (mm)	(m ²)	ation	shade	Diff	user	Reflec	ctance
None										
External	door sc	hedule								
Location			Height	(mm)	Width (m	m) (Opening	%	Orien	tation
None										
External	wall typ	е								
Wall ID		Wall Type			Solar absor	rptance	Wall Colour		Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	ΈB	AFS 160mm	FCF/INS/PB		0.50	l	Medium		3.00	No
External	wall sch	nedule								
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	nt- Ho sh pr	orizo adin ojec	ntal g feature* tion (mm)	Vertical shading feature

2900

ESE

1219

1804

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A309, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

BED 1

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1271	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2864	NNE	3915	Yes
BED 2	AFS 160/INS/PB	2900	2787	SE		Yes
KLD	AFS 160/INS/PB	2900	4005	ESE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	78.3	0.00
INT-PB	Internal Plasterboard Stud Wall	51.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					-	
Hot water system						
			Hot	Minim	ium .	Assessed
Туре		Fuel type	Water CER Zone	efficie STC	ency /	daily load [litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A309, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-MA9J5G-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A310, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	71.9	Suburban
Unconditioned*	6.3	NatHERS climate zone
Total	78.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.3	7.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-MA9J5G-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A310, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



7.3	Star	Rating	as of	10	Apr	2024
				•••	· .p	



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ns to the N	isfied CC

energy efficiency requirements.

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	3.14
KLD	Kitchen/Living	38.25
BED 1	Bedroom	14.66
ENS 1	Night Time	5.13
BED 2	Bedroom	10.73
BATH	Unconditioned	6.35

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*	onee	lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*	•	lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.41	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-02 B	3.40	2900	2400	Sliding	45	SE	None
KLD	ATB-004-02 B	3.39	2900	3905	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Description	1			Maximu	^{um} SHGO	SHGC sub tolerance	ostitution ranges
			-			U-value	9*	lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	Wind	ow Description	.			Maximu	um succ	SHGC sub tolerance	ostitution ranges
	Wind	ow Description	•			U-value	e* 01100	lower limit	upper limit
None									
Roof wii	ndow scł	nedule							
Location	Wine ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orien ation	t- Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	ance						
Skylight ID			Skylight de	scription					
None									
Skylight	schedule	9							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffu	ser Refle	ctance
None									
External	l door sc	hedule							
Location			Height	(mm)	Width (m	m)	Opening ^o	% Orier	ntation
None									
External	l wall typ	е							
Wall ID		Wall Type			Solar abso	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	l wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orier ation	nt- Hor sha pro	izontal ding feature* jection (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	ъВ	2900	1804	ESE	121	9	Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A310, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1284	NE		Yes
BED 2	AFS 160/INS/PB	2900	1181	NNE		Yes
BED 2	AFS 160/INS/PB	2900	2664	SE	2865	Yes
KLD	AFS 160/INS/PB	2900	4024	ESE	2612	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	85.6	0.00
INT-PB	Internal Plasterboard Stud Wall	57.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No


Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A310, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		11-4	Minim		

		Hot	Minimum	Assessed	
Туре	Fuel type	Water	efficiency /	daily load	
		CER Zone	STC	[litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-QJ8N1Y-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A311, 116-120 Frenchs Forest Rd , Frenchs Forest NSW 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	76.1	Open			
Unconditioned*	6.2	NatHERS climate zone			
Total	82.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	27.6	9.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-QJ8N1Y-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A311, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-QJ8N1Y-01 NatHERS Certificate



Certificate check	Approval stage		Construction stage		balect for the strengt
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.1 Star Rating as of 10 Apr 2024



Certificate check Approval stage		proval stage Construction stage			
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	4.21
KLD	Kitchen/Living	34.40
STUDY	Day Time	7.48
BED 1	Bedroom	14.46
ENS 1	Night Time	4.78
BATH	Unconditioned	6.16
BED 2	Bedroom	10.79

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
	•			lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A311, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	3.43	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	3.44	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	3.48	2800	3000	Awning	29	SSW	None
BED 2	ATB-004-03 B	3.47	2800	800	Fixed	0	SSW	None
ENS 1	ATB-004-01 B	3.45	970	900	Fixed	0	SSW	None
KLD	ATB-006-03 B	3.42	2900	3800	Sliding	60	ESE	None
STUDY	ATB-005-03 B	3.46	2800	2497	Awning	29	SSW	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	1972	Yes
BED 1	AFS 160/INS/PB	2900	3802	SSW		Yes
BED 1	AFS 160/INS/PB	2900	1529	NNE	3957	Yes
BED 2	AFS 160/INS/PB	2900	3599	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW		Yes
ENS 1	AFS 160/INS/PB	2900	2663	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	ESE	3501	Yes
STUDY	AFS 160/INS/PB	2900	2497	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	43.8	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.15	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed



Ceiling fans

	Location	Quantity	Diameter (mm)
STUDY 1 1400	STUDY	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hor	ne Data			
Heating system	n			
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hor	ne Data			

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

No Whole of Home Data

Battery schedule

Туре

Storage Capacity [kWh]

No Whole of Home Data





Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-9O3R0W-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	80.3	Open			
Unconditioned*	5.5	NatHERS climate zone			
Total	85.8	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	22.6	9.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-9O3R0W-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate. 6.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		age Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	er checked	ent authority/ /or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse surve)	Builde	Conse surve)	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.8 Star Rating as of 10 Apr 2024



Certificate check	ate check Approval stage		stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	ment is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	9.27
KLD	Kitchen/Living	33.30
HALL	Day Time	1.85
BED 1	Bedroom	15.36
ENS 1	Night Time	5.45
BED 2	Bedroom	10.43
STUDY	Day Time	4.64
BATH	Unconditioned	5.51

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	ID Window Description Maximum U-value*	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*	0.100	lower limit	upper limit	
Nana						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	4.05	2900	2400	Sliding	45	SSW	None
BED 2	ATB-004-03 B	4.04	2900	2400	Sliding	45	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-03 B	4.02	2900	4200	Sliding	60	WNW	None
KLD	ATB-003-03 B	4.06	2800	1300	Awning	58	WNW	None
KLD	ATB-004-03 B	4.03	2900	4000	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·	U-value*		lower limit upper lim	it	
None						
Custom* roof wi	ndows					
Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper lim	it	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (I	mm) O	pening %	Orientation	
None									

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	shorrtanoo		insulation	wall
		absorptance	Colour	(R-value)	wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3022	SSW	3209	Yes
BED 1	AFS MC 160/INS/PB	2900	1999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3477	SSW	3209	Yes
KLD	AFS MC 160/INS/PB	2900	8409	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	2439	NNE	4044	Yes
KLD	AFS MC 160/INS/PB	2900	4011	SSW	3208	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.4	0.00
INT-PB	Internal Plasterboard Stud Wall	86.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.3	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2100

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommend capacity	ed
No Whole of Home Data						
Heating system						
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommend capacity	ed
No Whole of Home Data				•		
Hot water system		Lint .	Minim		Assessed	
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]	
No Whole of Home Data						
Pool / spa equipment		Minimum				
Туре	Fuel type	efficiency performan	/ ice	Recom capacit	mended Y	
No Whole of Home Data						
Onsite Renewa	ble Energy schedu	le				

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-0J8073-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	81.8	Open
Unconditioned*	4.6	NatHERS climate zone
Total	86.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	18.3	7.2			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-0J8073-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-0J8073-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	HOUSE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Con	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor				1	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	bades Tatalos, aliana
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	45.03
BED 1	Bedroom	12.40
ENS 1	Night Time	6.33
BED 2	Bedroom	12.58
STUDIO	Day Time	5.51
BATH	Unconditioned	4.56

Window and glazed door type and performance

Default* windows

Window ID ALM-006-04 A	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	

Custom* windows

Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	······································	U-value*		lower limit upper limit	
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	4.10	2800	1600	Awning	58	WNW	None
BED 2	ALM-006-04 A	4.08	2900	2400	Sliding	60	WNW	None
KLD	ALM-006-04 A	4.07	2900	4000	Sliding	60	WNW	None
STUDIO	ATB-003-02 B	4.09	2800	1100	Awning	58	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	/indow ID Window D		v Description			Maximum	¹ SHGC*	SHGC substitution tolerance ranges		
						U-value*		lower limit	upper limit	
None										
Custom* roo	of windows									
Window ID	Win	dow Description				Maximum	¹ SHGC*	SHGC sub tolerance	stitution ranges	
	•••••					U-value*	0	lower limit	upper limit	
None										
Roof wir	ndow sc	chedule								
Location	Wi ID	ndow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None										
Skylight	type an	nd performa	NCC Skylight de	scription						
None				computer						
Skyliaht	schedu	le								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Reflee	ctance	
None										
External	door s	chedule								
Location			Height	(mm)	Width (mr	m) O	pening %	Orien	tation	
None										
External	wall ty	pe								
Wall ID		Wall Type			Solar absor	W ptance Co	all plour	Bulk insulation (R-value)	Reflective wall wrap*	
AFS MC 160	/INS/PB	AFS 160mm F	FCF/INS/PB Meta	I Cladded	0.73	Da (N	ark Ionument)	3.00	No	
External	wall sc	hedule								

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1878	WNW	5071	Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	4190	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3002	NNE	1808	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4097	Yes
KLD	AFS MC 160/INS/PB	2900	4204	WNW	2425	Yes
STUDIO	AFS MC 160/INS/PB	2900	1964	NNE	1808	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	68.7	0.00
INT-PB	Internal Plasterboard Stud Wall	53.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.1	N/A	0.15	Timber (12mm)
STUDIO	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDIO	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
	Location	Location Fuel Type	Location Fuel Type Minimum efficiency / performance Location Fuel Type Minimum efficiency / performance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.4 Star Rating as of 10 Apr 2024



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	um d	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have BWERS (Window Energy Rating Scheme) rating. Default windows windows that are specific type of window product and whose properties have been drived by statistical methods. ERR Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to solely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - protected terrain with murrous, booley spaced obstructions below 10m e.g. quant dividuatial areas. Exposure category - protected terrain with numerous, booley spaced obstructions or 00 m e.g. quant dividuatial areas. Motional Construction Code the NCC groups buildings by their function and use, and assigns a dassification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Clos Closs 10 building in the hoticonal ylane, e.g. enswer, arrandsh, peroplas, carports, or orehmaps or balonnies from upper lev	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Elicany Ratio, messure of how much cooling can be achieved by an ir conditioner for a single WNh of electricity input Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category: exposed terms within the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category: exposed terms within the modelling activate and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category: exposed terms with now obstructions at a similar height a g gasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated built big. Exposure category: protected terms with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category: protected terms with numerous, closely spaced obstructions over 10 me.g. city and industrial areas. Provisional value nervisional value of the obstruction to the out at van adalspin a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Cloce (Class 1) buildings by t	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Utilicitory Rabio, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Stardard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazm gland. cocan-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - oppon terrain with new obstructions e.g. fill grazm gland. cocan-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily regetated bushinad areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. aeves, variadhis, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or openabile (moveable) area of doors or windrows that is used in ventilation calculations.	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). out wannings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-HOU1SJ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A403, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	74.4	Open	
Unconditioned*	4.6	NatHERS climate zone	
Total	78.9	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	7.6	10.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-HOU1SJ-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A403, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:




Certificate check	Approva	stage	Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	isent authority/ /eyor checked	der checked	sent authority/ veyor checked	upancy/other
It is not mandatory to complete this checklist.	Ass	Con	Buil	Con sur	0000
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.3 Star Rating as of 10 Apr 2024



Certificate check	1eck Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	ment is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.97
BED 1	Bedroom	14.85
BED 2	Bedroom	10.61
ENS 1	Night Time	6.94
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-03 B	4.13	2800	1600	Awning	63	WNW	None
BED 2	ATB-004-03 B	4.12	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-03 B	4.11	2900	4056	Sliding	60	WNW	None



Roof window type and performance value

Default* roof windows

Window ID Windo		ndow Description		Maximu	m SHGC*	SHGC substitution tolerance ranges			
		. U-value			*	lower limit	upper limit		
None									
Custom* roof	windows								
Window ID	Windo	ow Description				Maximu	^m SHGC*	SHGC sub	stitution ranges
						U-value ³	* 01100	lower limit	upper limit
None									
Roof win	dow sch	nedule							
Location	Wind ID	wol	Window no.	Opening %	g Heigh (mm)	it Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	NCC Shudiated de						
None			Skylight de	scription					
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Reflee	ctance
None									
External	door scl	hedule							
Location			Height	(mm)	Width (I	mm) (Opening %	Orien	itation
none									
External	wall type	9							
Wall ID		Wall Type			Sola abso	ar \ orptance (Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/I	NS/PB	AFS 160mm F	FCF/INS/PB Meta	I Cladded	0.73	; ; (Dark Monument)	3.00	No
External	wall sch	edule							

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2102	WNW	2491	Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	3544	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	2480	NNE	2030	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4667	Yes
KLD	AFS MC 160/INS/PB	2900	4640	WNW	2448	Yes
KLD	AFS MC 160/INS/PB	2900	2623	SSW	1800	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	92.9	0.00
INT-PB	Internal Plasterboard Stud Wall	32.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
					Minimum	Pacammandad
Туре	Location			Fuel Type	efficiency / performance	capacity
No Whole of Home Data						
Hot water system						
			Hot	Minir	num	Assessed
Туре		Fuel type	Water	effici	ency /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A403, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency / performance		Recom capacit	mended Y	
No Whole of Home Data						

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-WCDQ89-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A404, 116-120 Frenchs Forest Rd ,
	Frenchs Forest, NSVV, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	97.0	Open			
Unconditioned*	5.3	NatHERS climate zone			
Total	102.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	7.4	9.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-WCDQ89-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A404, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEADY LAINE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





8.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	er checked	ent authority/ vor checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse	Builde	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	52.49
BED 1	Bedroom	15.12
ENS 1	Night Time	5.49
BED 2	Bedroom	12.63
BED 3	Bedroom	11.30
BATH	Unconditioned	5.33

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID Window	Window Description	Maximum Si	HGC*	tolerance ranges		
		U-value*	•	lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-006-04 A	4.16	2900	2400	Sliding	45	WNW	None
BED 2	ALM-006-04 A	4.17	2900	2400	Sliding	45	WNW	None
BED 3	ATB-004-04 B	4.18	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-04 B	4.14	2900	4632	Sliding	60	NNE	None

* Refer to glossary.

~ . . ~ ~

.



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-04 B	4.15	2900	1900	Sliding	45	ESE	None
KLD	ATB-004-04 B	4.19	2900	4000	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3248	WNW		Yes
BED 1	AFS MC 160/INS/PB	2900	2480	SSW	2015	Yes
BED 2	AFS MC 160/INS/PB	2900	3511	WNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3141	WNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3597	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4660	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	2205	ESE	4176	Yes
KLD	AFS MC 160/INS/PB	2900	4292	NNE	2212	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	51.1	0.00
INT-PB	Internal Plasterboard Stud Wall	65.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recomn capacity	nended /
No Whole of Home Data					

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-3P7FDL-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A405, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	108.1	Open
Unconditioned*	4.7	NatHERS climate zone
Total	112.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.5	6.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-3P7FDL-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A405, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HINK

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-3P7FDL-01 NatHERS Certificate

8.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Je Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons surve	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor		·			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	Partice Burling of Joint	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	48.83
BED 1	Bedroom	19.23
BED 2	Bedroom	11.48
BED 3	Bedroom	12.50
STUDY	Day Time	6.02
HALL	Day Time	3.67
BATH	Unconditioned	4.71
ENS 1	Night Time	6.37

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	U-value*		lower limit	upper limit		
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-003-03 B	4.24	2800	900	Awning	58	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A405, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	4.23	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-04 B	4.22	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-04 B	4.21	2900	1900	Sliding	45	WNW	None
BED 3	ATB-004-04 B	4.26	2800	2400	Sliding	28	E	None
KLD	ATB-004-04 B	4.20	2900	4577	Sliding	60	NNE	None
STUDY	ATB-003-02 B	4.25	2800	1600	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

8.4 Star Rating as of 10 Apr 2024

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	5190	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	3396	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	2969	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	2205	WNW	4831	Yes
BED 3	AFS MC 160/INS/PB	2900	2820	E		Yes
BED 3	AFS MC 160/INS/PB	2900	1033	S		Yes
BED 3	AFS MC 160/INS/PB	2900	3093	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	4770	NNE	2212	Yes
STUDY	AFS MC 160/INS/PB	2900	2736	ESE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	49.3	0.00
INT-PB	Internal Plasterboard Stud Wall	84.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.15	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.9	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

0			
Location	Quantity	Diameter (mm)	



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
Nama			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				-	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficien STC	im A icy/ c f	Assessed daily load litres]
No Whole of Home Data					
Pool / spa equipment		Minimum			
Туре	Fuel type	efficiency / performanc	e	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	/]
No Whole of Home Data					



Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-B1WFM1-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A406, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	76.2	Open
Unconditioned*	4.1	NatHERS climate zone
Total	80.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	26.7	3.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-B1WFM1-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A406, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEADY LAINE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



7.0 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	tion	Policy Lance of South
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sessor checked	sent authority/ veyor checked	lder checked	sent authority/ veyor checked	supancy/other
It is not mandatory to complete this checklist.	Ass	Con	Buil	Con	000
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A406, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.0 Star Rating as of 10 Apr 2024



Certificate check	ertificate check Approval stage		stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging								
Does the dwelling meet the NCC requirement for thermal bridging?								
Insulation installation method								
Has the insulation been installed according to the NCC requirements?								
Building sealing								
Does the dwelling meet the NCC requirements for Building Sealing?								
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)				
Appliances								
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?								
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)						
Does the lighting meet the artificial lighting requirements specified in the NCC?								
Does the hot water system meet the additional requirements specified in the NCC?								
Provisional values* check								
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?								
Other NCC requirements								
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.								



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	38.56
BED 1	Bedroom	17.77
ENS 1	Night Time	6.41
BED 2	Bedroom	10.82
STUDY	Day Time	2.67
BATH	Unconditioned	4.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
	·····	U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	4.30	2800	1400	Awning	58	ESE	None
BED 2	ATB-003-02 B	4.29-A	2800	1200	Awning	58	ESE	None
BED 2	ATB-004-04 B	4.29-B	2800	1200	Fixed	0	ESE	None
BED 2	ATB-004-04 B	4.28	2800	2400	Sliding	45	SSW	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-04 B	4.27	2900	3800	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1602	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3006	SSW	3982	Yes
BED 2	AFS MC 160/INS/PB	2900	2835	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4010	ESE	3066	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	73.2	0.00
INT-PB	Internal Plasterboard Stud Wall	58.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.6	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction			Bulk insulatio (R-value)	Reflective n wrap*)
None					
Ceiling penetrations*					
Location	Qu	antity	Туре	Diameter (mm)	Sealed /unsealed


Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

No Whole of Home Data



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um A	Assessed
Туре	Fuel type	Water	efficie	ncy/ c	laily load
		CER Zone	STC]	litres]

No Whole of Home Data

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-XGED0O-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A407, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	70.6	Open
Unconditioned*	3.5	NatHERS climate zone
Total	74.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.4	4.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-XGED00-01. When using either link, ensure you are visiting http://www.hero-software. com.au



NATIONWIDE HOUSENEE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	ilder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	CO	Bu	CO	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	ment is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	35.71
BED 1	Bedroom	13.67
ENS 1	Night Time	4.31
BED 2	Bedroom	12.66
BATH	Day Time	4.21
LAUNDRY	Unconditioned	3.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges			
		U-value*		lower limit	upper limit		
None							

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	4.34	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-01 B	4.33	2800	2400	Sliding	22	SE	None
BED 2	ATB-004-04 B	4.32	2800	2400	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-04 B	4.31	2900	3802	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2411	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	1169	NE		Yes
BED 2	AFS MC 160/INS/PB	2900	2799	SE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3181	NNE	4065	Yes
KLD	AFS MC 160/INS/PB	2900	4022	ESE	2966	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	74.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ВАТН	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Downlight	190	Sealed
LAUNDRY	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Type Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
---------------	-----------	--	----------------------



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency / performance		Recom capacity	mended y	
No Whole of Home Data						

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-P86Q9K-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A408, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned* 95.6		Open			
Unconditioned*	3.1	NatHERS climate zone			
Total	98.7	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	9.3	15.7		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-P86Q9K-01. When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-P86Q9K-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	pnsent authority/ rveyor checked	uilder checked	onsent authority/ rveyor checked	scupancy/other
It is not mandatory to complete this checklist.	As	su CC	Bu	su CC	ŏ
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	9.63
KLD	Kitchen/Living	35.13
BED 1	Bedroom	17.03
ENS 1	Night Time	6.18
BED 2	Bedroom	11.61
LAUNDRY	Unconditioned	3.09
BATH	Day Time	4.40
BED 3	Bedroom	11.63

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	w ID Window Description Maximu U-value	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
Nana						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	4.37	2900	2400	Sliding	45	ESE	None
BED 1	ATB-004-03 B	4.38	2900	1000	Fixed	0	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A408, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	4.39	2900	2400	Sliding	45	SSW	None
BED 3	ATB-004-03 B	4.40	2900	2400	Sliding	45	SSW	None
ENS 1	ATB-004-04 B	4.36	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	4.35	2900	4000	Sliding	60	ESE	None

Roof window type and performance value

Default* root	fwindows								
Window ID	Winde	ow Descriptio	on			Maximun	¹ SHGC*	SHGC sub tolerance	stitution ranges
						U-value*		lower limit	upper limit
None									
Custom* roc	of windows								
						Maximun	1	SHGC sub tolerance	stitution ranges
Window ID	Windo	ow Descriptio	on			U-value*	SHGC*	lower limit	upper limit
None									
Roof wir	ndow sch	nedule							
Location	Wind ID	dow	Window no.	Openir %	ng Height (mm)	t Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l perform	ance						
Skylight ID	5.		Skylight de	scriptior	ı				
None									
Skylight	schedule	e							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflec	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (n	nm) O	pening %	Orien	tation
None									



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1617	SSW		Yes
BED 1	AFS MC 160/INS/PB	2900	3280	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	3474	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	2945	SSW		Yes
BED 3	AFS MC 160/INS/PB	2900	2953	SSW		Yes
BED 3	AFS MC 160/INS/PB	2900	1999	WNW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2632	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	4036	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	2826	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	46.0	0.00
INT-PB	Internal Plasterboard Stud Wall	92.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.1	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	3	Downlight	190	Sealed
KLD	1	Exhaust Fan	350	Sealed
LAUNDRY	1	Exhaust Fan	350	Sealed
LAUNDRY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
	• •		

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]

No Whole of Home Data

Pool / spa equipment

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		
Battery schedule		

Туре	Storage Capacity [kWh]



Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-0HC3TO-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	80.3	Open	
Unconditioned*	5.5	NatHERS climate zone	
Total	85.8	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	23.0	13.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-0HC3TO-01. When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:

Cost:







6.2	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approva	l stage	Construction stage		indications around
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.2 Star Rating as of 10 Apr 2024



Certificate check		stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

HOUSE

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	9.27
KLD	Kitchen/Living	33.31
HALL	Day Time	1.85
BED 1	Bedroom	15.36
ENS 1	Night Time	5.45
BED 2	Bedroom	10.43
STUDY	Day Time	4.64
BATH	Unconditioned	5.51

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	5.05	2900	2400	Sliding	45	SSW	None
BED 2	ATB-004-03 B	5.04	2900	2400	Sliding	45	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-03 B	5.03	2900	4200	Sliding	60	WNW	None
KLD	ATB-003-03 B	5.06	2800	1300	Awning	58	WNW	None
KLD	ATB-004-03 B	5.02	2900	4000	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	P	U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								
External door schedule								
Location			Height	(mm)	Width (I	mm) C)pening %	Orientation
None								

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	shorrtanoo		insulation	wall
		absorptance	Colour	(R-value)	wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3022	SSW	2615	Yes
BED 1	AFS MC 160/INS/PB	2900	1999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3477	SSW	2615	Yes
KLD	AFS MC 160/INS/PB	2900	8409	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	2439	NNE	4140	Yes
KLD	AFS MC 160/INS/PB	2900	4014	SSW	2612	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.4	0.00
INT-PB	Internal Plasterboard Stud Wall	86.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.3	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um A ncy / d	ssessed aily load itres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	9	Recomme capacity	ended
No Whole of Home Data		-			
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [kW]
No Whole of Home Data					
Battery schedul	e				
Туре		Storage Capacit	ty [kWh]		
No Whole of Home Data					



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-JEKANZ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A502, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type		
Conditioned*	81.8	Open		
Unconditioned*	4.6	NatHERS climate zone		
Total	86.4	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.6	4.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-JEKANZ-01.

http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:






Certificate check	Approva	l stage	Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	45.03
BED 1	Bedroom	12.40
ENS 1	Night Time	6.33
BED 2	Bedroom	12.58
STUDIO	Day Time	5.51
BATH	Unconditioned	4.56

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit u	upper limit	
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	5.10	2800	1600	Awning	58	WNW	None
BED 2	ALM-006-04 A	5.08	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-04 B	5.07	2900	4000	Sliding	60	WNW	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086 ----



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
STUDIO	ATB-003-02 B	5.09	2800	1100	Awning	58	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof wi	ndows					

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1878	WNW	5110	Yes
BED 2	AFS MC 160/INS/PB	2900	4190	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3002	NNE	1794	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4097	Yes
KLD	AFS MC 160/INS/PB	2900	4204	WNW	2525	Yes
STUDIO	AFS MC 160/INS/PB	2900	1964	NNE	1794	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	68.7	0.00
INT-PB	Internal Plasterboard Stud Wall	53.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.0	N/A	0.15	Timber (12mm)
STUDIO	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction			Bu in: (R	ulk sulation -value)	Reflective wrap*
None						
Ceiling penetrations*						
Location		Quantity	Туре	Diameter (mm) Sea /un	aled isealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDIO	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım d	hasasad

		HOT	MINIMUM	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
· · · · · · · · · · · · · · · · · · ·			

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-GMMZM6-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A503, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	74.4	Open
Unconditioned*	4.6	NatHERS climate zone
Total	78.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

Volume 1

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.3	6.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-GMMZM6-01.

When using either link, ensure you are visiting http://www.hero-software. com.au





Note, variations and additions to the NCC energy efficiency requirements Predicted Whole of Home annual may apply in some states and territories.

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:

Cost:





7.6 Star Rating as of 10 Apr 2024



Certificate check	Approva	stage	Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	int authority/ or checked	r checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.97
BED 1	Bedroom	14.85
BED 2	Bedroom	10.61
ENS 1	Night Time	6.94
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36	
ATB-003-02 B	AI Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	

Custom* windows

Window ID	Window Description	Maximum Si	HGC*	SHGC substitution tolerance ranges		
	P	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	5.13	2800	1600	Awning	58	WNW	None
BED 2	ALM-006-04 A	5.12	2900	2400	Sliding	45	WNW	None
KLD	ALM-006-04 A	5.11	2900	4000	Sliding	60	WNW	None



Roof window type and performance value

Default* roof windows

Window ID Window Descri		ow Description				Maximun	^າ SHGC*	SHGC substitution tolerance ranges	
						U-value*		lower limit	upper limit
None									
Custom* root	f windows								
Window ID	Wind	ow Description				Maximun	¹ SHGC*	SHGC sub tolerance	stitution ranges
						U-value*	onee	lower limit	upper limit
None									
Roof win	dow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	NCC Skylight de	scription					
None			okylight de	scription					
Skylight	schodul	0							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (mr	m) O	pening %	Orien	tation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	W ptance C	′all olour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/I	INS/PB	AFS 160mm F	CF/INS/PB Meta	I Cladded	0.73	Da (N	ark Ionument)	3.00	No
External	wall sch	nedule							

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2102	WNW	2489	Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	3544	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	2480	NNE	2007	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4653	Yes
KLD	AFS MC 160/INS/PB	2900	4640	WNW	2489	Yes
KLD	AFS MC 160/INS/PB	2900	2623	SSW	1772	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	92.9	0.00
INT-PB	Internal Plasterboard Stud Wall	32.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)	
None			

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
None				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					-	
Hot water system						
			Hot	Minimu	ım	Assessed
Туре		Fuel type	Water	efficier	ncy /	daily load
-		-	CER Zone	STC	-	[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A503, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recomm capacity	nended
No Whole of Home Data					

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-XJYRTK-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A504, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	97.0	Open			
Unconditioned*	5.3	NatHERS climate zone			
Total	102.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	5.6	10.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-XJYRTK-01</u>. When using either link, ensure you are visiting

http://www.hero-software.

com.au



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Cost:



No Whole of Home performance assessment conducted for this certificate.

8.4	Star	Rating	as (of 10	Apr	2024
-----	------	--------	------	-------	-----	------



Certificate check	Approval stage		Construction stage		Even i seven si ester
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	52.49
BED 1	Bedroom	15.12
ENS 1	Night Time	5.49
BED 2	Bedroom	12.63
BED 3	Bedroom	11.30
BATH	Unconditioned	5.33

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-006-04 A	5.16	2900	2400	Sliding	45	WNW	None
BED 2	ALM-006-04 A	5.17	2900	2400	Sliding	45	WNW	None
BED 3	ATB-004-04 B	5.18	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-04 B	5.14	2900	4600	Sliding	60	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-04 B	5.15	2900	1900	Sliding	45	ESE	None
KLD	ATB-004-04 B	5.19	2900	4000	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	-	U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3248	WNW		Yes
BED 1	AFS MC 160/INS/PB	2900	2480	SSW	2008	Yes
BED 2	AFS MC 160/INS/PB	2900	3511	WNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3141	WNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3597	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4660	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	2205	ESE	4191	Yes
KLD	AFS MC 160/INS/PB	2900	4292	NNE	2486	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	51.1	0.00
INT-PB	Internal Plasterboard Stud Wall	65.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

....



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index in a same region explose, carports, or ovehangs or balatonies form upper levels. National Construction Code the Operability percentage or operable (moveable) area of doors or windows that is used in ventidabon calculatons. Provides had	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and to discustions below TOm, farmiand with scattered sheds, lightly vegetated built (as cate and basing na a tached Cos Cos N to discusting flat mees. Exposure category - protocted terrain with murrous, lockey spaced obstructions or 0 me.g. q. and nationatish areas. Provisional shading feature provises shading to the building in the hortconand use, and assignis a cla	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single statistical methods. Exposure category - protected termin with numerous, dosely spaced obstructions below 10m e.g. suburban housing, heavity vegetated bushand areas. Exposure category - protected termin with numerous, dosely spaced obstructions ore 10 m e.g. city and industrial areas. Options from upper levels. National Construction Code the torical stating. Beginities carports, or overhangs or balonies from upper levels. National Construction Code the motorolal tip neis a classification code. NatHERS softw	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., filt grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and uses and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operabile (moveable) area of doors or windows that is used in ventilation calculations. Provisional value ansumed value that does not represent an actual value. For example, if the waltHERS Technical Nole and can be found at www. nathers.gov au Reflective wrag (also known as foil) can be appropriate aing and antison appropriate aing and antisoxity value, it provides insulative p	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comfirmed by a suitably q	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at tww. abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selecton sing should be confirmed by a suitably qualified perons. <th>Exposure category - exposed</th> <th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-IVJZGR-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A505, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	108.1	Open
Unconditioned*	4.7	NatHERS climate zone
Total	112.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.4	7.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-IVJZGR-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A505, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-IVJZGR-01 NatHERS Certificate

8.4 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occl	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor		-	-	-		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construction stage		balica kono, ufinor
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging								
Does the dwelling meet the NCC requirement for thermal bridging?								
Insulation installation method								
Has the insulation been installed according to the NCC requirements?								
Building sealing								
Does the dwelling meet the NCC requirements for Building Sealing?								
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)				
Appliances								
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?								
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?								
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)						
Does the lighting meet the artificial lighting requirements specified in the NCC?								
Does the hot water system meet the additional requirements specified in the NCC?								
Provisional values* check								
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?								
Other NCC requirements								
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied nclude, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.							



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	48.83
BED 1	Bedroom	19.23
BED 2	Bedroom	11.48
BED 3	Bedroom	12.50
STUDY	Day Time	6.02
HALL	Day Time	3.67
BATH	Unconditioned	4.71
ENS 1	Night Time	6.37

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
WIND		U-value*		lower limit	upper limit	
NI						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	5.24	2800	900	Fixed	0	ESE	None
BED 1	ATB-004-04 B	5.23	2900	2400	Sliding	45	NNE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A505, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-04 B	5.22	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-04 B	5.21	2900	1900	Sliding	45	WNW	None
BED 3	ATB-004-04 B	5.26	2800	2400	Sliding	28	E	None
KLD	ATB-004-04 B	5.20	2900	4000	Sliding	60	NNE	None
STUDY	ATB-003-02 B	5.25	2800	1600	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID	VID Window Description Maxi	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	5190	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	3396	NNE		No
BED 2	AFS MC 160/INS/PB	2900	2969	NNE		No
BED 2	AFS MC 160/INS/PB	2900	2205	WNW	4816	Yes
BED 3	AFS MC 160/INS/PB	2900	2820	E		Yes
BED 3	AFS MC 160/INS/PB	2900	1033	S		Yes
BED 3	AFS MC 160/INS/PB	2900	3093	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	4770	NNE	2486	Yes
STUDY	AFS MC 160/INS/PB	2900	2736	ESE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	49.3	0.00
INT-PB	Internal Plasterboard Stud Wall	84.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.8	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------


Roof type

Construction	Added So insulation ab (R-value)	olar bsorptance	Roof Colour
--------------	--	--------------------	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fi	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fu	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				-	
Hot water system					
		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	•	Recomi capacit	mended Y
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k	w]

1990	Onontatation	
No Whole of Home Data		
Pattory schodula		

Storage Capacity [kWh]

Battery schedule

туре	
No Whole of Home Data	

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A505, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-8YTWWS-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A506, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	76.2	Open
Unconditioned*	4.1	NatHERS climate zone
Total	80.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

Volume 1

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	23.8	3.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-8YTWWS-01</u>. When using either link, ensure you are visiting http://www.hero-software.





Note, variations and additions to the NCC energy efficiency requirements Predicted Whole of Home annual may apply in some states and territories.

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:

Cost:





7.3 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		l stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging												
Does the dwelling meet the NCC requirement for thermal bridging?												
Insulation installation method												
Has the insulation been installed according to the NCC requirements?												
Building sealing												
Does the dwelling meet the NCC requirements for Building Sealing?												
Whole of Home performance check (not applicable if a Whole of Home assessment is not conducted)												
Appliances												
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?												
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)										
Does the lighting meet the artificial lighting requirements specified in the NCC?												
Does the hot water system meet the additional requirements specified in the NCC?												
Provisional values* check												
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?												
Other NCC requirements												
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC												

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	38.56
BED 1	Bedroom	17.77
ENS 1	Night Time	6.41
BED 2	Bedroom	10.82
STUDY	Day Time	2.67
BATH	Unconditioned	4.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	5.30	2800	1400	Awning	58	ESE	None
BED 2	ATB-003-02 B	5.29-A	2800	1200	Awning	58	ESE	None
BED 2	ATB-004-03 B	5.29-B	2800	1200	Fixed	0	ESE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-04 B	5.28	2800	2400	Sliding	45	SSW	None
KLD	ATB-004-04 B	5.27	2900	3800	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1602	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3006	SSW	4002	Yes
BED 2	AFS MC 160/INS/PB	2900	2835	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4010	ESE	3018	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	73.2	0.00
INT-PB	Internal Plasterboard Stud Wall	58.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
NL			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling *penetrations**

BATH1Exhaust Fan350SealedBED 13Downlight190SealedBED 22Downlight190SealedENS 11Downlight190SealedENS 11Exhaust Fan350SealedKLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 13Downlight190SealedBED 22Downlight190SealedENS 11Downlight190SealedENS 11Exhaust Fan350SealedKLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	BATH	1	Exhaust Fan	350	Sealed
BED 22Downlight190SealedENS 11Downlight190SealedENS 11Exhaust Fan350SealedKLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	BED 1	3	Downlight	190	Sealed
ENS 11Downlight190SealedENS 11Exhaust Fan350SealedKLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	BED 2	2	Downlight	190	Sealed
ENS 11Exhaust Fan350SealedKLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	ENS 1	1	Downlight	190	Sealed
KLD6Downlight190SealedKLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	ENS 1	1	Exhaust Fan	350	Sealed
KLD1Exhaust Fan260SealedSTUDY1Downlight190Sealed	KLD	6	Downlight	190	Sealed
STUDY 1 Downlight 190 Sealed	KLD	1	Exhaust Fan	260	Sealed
	STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-PT4JMK-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A507, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	70.6	Open			
Unconditioned*	3.5	NatHERS climate zone			
Total	74.1	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1		
State/Territory variation	Yes		

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	25.2	4.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-PT4JMK-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A507, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-PT4JMK-01 NatHERS Certificate

7.0 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		HOUSE NULLY REPORT OF ALL
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.0 Star Rating as of 10 Apr 2024



Certificate check	ificate check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied CC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	35.71
BED 1	Bedroom	13.67
ENS 1	Night Time	4.31
BED 2	Bedroom	12.66
BATH	Day Time	4.21
LAUNDRY	Unconditioned	3.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	······	U-value*	•	lower limit	upper limit	
ATB-003-02 B	AI Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	5.34	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-04 B	5.33	2800	2400	Sliding	22	SE	None
BED 2	ATB-004-04 B	5.32	2800	2400	Sliding	45	NNE	None
KLD	ATB-004-04 B	5.31	2900	3802	Sliding	60	ESE	None



Roof window type and performance value

Default* roof windows

Window ID Wind		/indow Description		Maximum	¹ SHGC*	SHGC substitution tolerance ranges			
		p				U-value*		lower limit	upper limit
None									
Custom* roof	windows								
Window ID	Wind	low Description				Maximum	I SHGC*	SHGC sub	stitution ranges
						U-value*	onee	lower limit	upper limit
None									
Roof wind	dow sci	hedule							
Location	Win ID	ldow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight t	ype and	d performa	nce						
Skylight ID			Skylight de	scription					
none									
Skylight a	schedul	le							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflec	ctance
None									
External of	door so	chedule							
Location			Height	(mm)	Width (m	m) O	pening %	Orien	tation
None									
External v	wall typ	<i>De</i>							
Wall ID		Wall Type			Solar absor	W ptance Co	all plour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/IN	NS/PB	AFS 160mm F	FCF/INS/PB Meta	I Cladded	0.73	Da (N	ark Ionument)	3.00	No
External v	wall scl	hedule					Horizo	ntal	Vortical

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature	
BED 1	AFS MC 160/INS/PB	2900	2411	ESE		Yes	



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	1169	NE		Yes
BED 2	AFS MC 160/INS/PB	2900	2799	SE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3181	NNE	4045	Yes
KLD	AFS MC 160/INS/PB	2900	4022	ESE	3018	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	74.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.7	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Downlight	190	Sealed
LAUNDRY	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)	
None					

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system Minimum Recommended Туре Location **Fuel Type** efficiency / capacity performance No Whole of Home Data **Heating system** Minimum Recommended Туре Location **Fuel Type** efficiency / capacity performance



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım A	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-GIFDW8-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A508, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type				
Conditioned* 95.6 Unconditioned* 3.1		Open				
		NatHERS climate zone				
Total	98.7	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.1	7.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-GIFDW8-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A508, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-GIFDW8-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construction			HOUSE Material and a second
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons surve	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		1	1	1	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	9.63
KLD	Kitchen/Living	35.13
BED 1	Bedroom	17.03
ENS 1	Night Time	6.18
BED 2	Bedroom	11.61
LAUNDRY	Unconditioned	3.09
BATH	Day Time	4.40
BED 3	Bedroom	11.63

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	indow ID Window Description Max U-v	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
Nana						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	5.37	2900	2400	Sliding	45	ESE	None
BED 1	ATB-004-03 B	5.38	2900	1000	Fixed	0	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A508, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	5.39	2900	2400	Sliding	45	SSW	None
BED 3	ATB-004-03 B	5.40	2900	2400	Sliding	45	SSW	None
ENS 1	ATB-004-04 B	5.36	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	5.35	2900	4000	Sliding	60	ESE	None

Roof window type and performance value

Default* roo	f windows								- 414 - 41	
Window ID	Winde	Window Description				Maximum	SHGC*	tolerance ranges		
						U-value*		lower limit	upper limit	
None										
Custom* roo	of windows									
						Movimum		SHGC sub	stitution	
Window ID	Windo	ow Descriptio	on			U-value*	num SHGC* lue*	tolerance		
None										
Roof wir	ndow sch	nedule								
Location	Wind ID	dow	Window no.	Openir %	ng Height (mm)	t Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None										
Skvliaht	tvpe and	l perform	ance							
Skylight ID	-91	<u>-</u>	Skylight de	scription	I					
None										
Skylight	schedule	e								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Refle	ctance	
None										
External	door sc	hedule								
Location			Height	(mm)	Width (m	nm) Op	pening %	Orien	itation	
None										



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1617	SSW	2552	Yes
BED 1	AFS MC 160/INS/PB	2900	3280	ESE	2908	Yes
BED 1	AFS MC 160/INS/PB	2900	3474	SSW	2552	Yes
BED 2	AFS MC 160/INS/PB	2900	2945	SSW	2552	Yes
BED 3	AFS MC 160/INS/PB	2900	2953	SSW	2552	Yes
BED 3	AFS MC 160/INS/PB	2900	1999	WNW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2632	ESE	2896	Yes
KLD	AFS MC 160/INS/PB	2900	4036	ESE	2892	Yes
KLD	AFS MC 160/INS/PB	2900	2826	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	45.9	0.00
INT-PB	Internal Plasterboard Stud Wall	92.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.1	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	260	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	260	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	3	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)	
None					

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Minimum Fuel Type efficiency / performance	Recommended capacity
No Whole of Home Data			

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore (horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore that achieves an at taze orenergy value? Op	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the will colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.abters.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not hava a diff	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Stading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-33UO10-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	80.3	Open
Unconditioned*	5.5	NatHERS climate zone
Total	85.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	27.6	8.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-33UO10-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-33UO10-01 NatHERS Certificate

6 3 Star Rating as of 10 Apr 2024

ARC-330010-01 Nathers Certificate 6.3 Star Rating as of 10 Apr 2024					HOUSE	
Certificate check	Approva	Approval stage		tion		
The checklist covers important items impacting the dwelling's	pe	م بر م		م زر	<u>ب</u>	
ratings. It is recommended that the accuracy of the whole certificate is	lecke	chorit	sked	cke	othe	
checked.	or ch	it aut	chec	it auf or ch	Incy/	
Note: The boxes indicate when and who should check each item.	sess	nsen veyc	lder	nsen veyc	edno	
It is not mandatory to complete this checklist.	Ass	Col	Bui	Col	õ	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls			·			
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Floor type</i> ' table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						



6.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Sudest Borrow, strawe
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.


Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	9.27
KLD	Kitchen/Living	33.30
HALL	Day Time	1.85
BED 1	Bedroom	15.36
ENS 1	Night Time	5.45
BED 2	Bedroom	10.43
STUDY	Day Time	4.64
BATH	Unconditioned	5.51

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-006-03 B	6.05	2900	2400	Sliding	45	SSW	None
BED 2	ATB-006-03 B	6.04	2900	2400	Sliding	45	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-006-03 B	6.03	2900	4200	Sliding	60	WNW	None
KLD	ATB-005-03 B	6.06	2800	1300	Awning	58	WNW	None
KLD	ATB-006-03 B	6.02	2900	4000	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25	

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	1500	900	SSE	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation	
None					

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	absorptance	Colour	insulation (R-value)	wall wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3022	SSW	2615	Yes
BED 1	AFS MC 160/INS/PB	2900	1999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3477	SSW	2615	Yes
KLD	AFS MC 160/INS/PB	2900	8409	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	2439	NNE	4140	Yes
KLD	AFS MC 160/INS/PB	2900	4008	SSW	2611	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.4	0.00
INT-PB	Internal Plasterboard Stud Wall	86.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.3	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2700



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				-	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um ncy /	Assessed daily load Ilitres1
No Whole of Home Data					[]
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performan	/ ice	Recomn capacity	nended
No Whole of Home Data					
		1			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-SQE9WI-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	81.8	Open			
Unconditioned*	4.6	NatHERS climate zone			
Total	86.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.0	10.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-SQE9WI-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



6.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construct stage		tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sessor checked	rsent authority/ veyor checked	lder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Buil	Cor sur	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	45.03
BED 1	Bedroom	12.40
ENS 1	Night Time	6.33
BED 2	Bedroom	12.58
STUDIO	Day Time	5.51
BATH	Unconditioned	4.56

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56
ALM-005-01 A	Aluminium A DG Argon Fill Clear-Clear	4.50	0.50	0.47	0.53

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	······	U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-005-01 A	6.10	2800	1600	Awning	58	WNW	None
BED 2	ALM-004-03 A	6.08	2900	2400	Sliding	45	WNW	None
KLD	ALM-004-03 A	6.07	2900	4000	Sliding	60	WNW	None
STUDIO	ALM-005-01 A	6.09	2800	1100	Awning	58	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	SW	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (n	חm) C) Dpening %	Orientation	

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1878	WNW	5110	Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	4190	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3002	NNE	1794	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4097	Yes
KLD	AFS MC 160/INS/PB	2900	4204	WNW	2525	Yes
STUDIO	AFS MC 160/INS/PB	2900	1964	NNE	1794	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	68.7	0.00
INT-PB	Internal Plasterboard Stud Wall	53.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.0	N/A	0.15	Timber (12mm)
STUDIO	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDIO	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDIO	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-IGZ7PS-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	74.4	Open			
Unconditioned*	4.6	NatHERS climate zone			
Total	78.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.3	11.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> au/pdf/HR-IGZ7PS-01.

When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-IGZ7PS-01 NatHERS Certificate

7.0 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	ilder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	CO	Bui	Sur	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.0 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	IndeX's scine. In seve
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.97
BED 1	Bedroom	14.85
BED 2	Bedroom	10.61
ENS 1	Night Time	6.94
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-003-03 A	Aluminium A DG Air Fill High Solar Gain low-E -Clear	4.30	0.47	0.45	0.49
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution * tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-003-03 A	6.13	2800	1600	Awning	58	WNW	None
BED 2	ALM-004-03 A	6.12	2900	2400	Sliding	45	WNW	None
KLD	ALM-004-03 A	6.11	2900	4000	Sliding	60	WNW	None



Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID Window Description	Window Description	Maximum	laximum SHGC*		SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit	
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25	

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	WNW	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (n	חm) C) Dpening %	Orientation	

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2102	WNW	2489	Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	3544	WNW		No
BED 2	AFS MC 160/INS/PB	2900	2480	NNE	2007	Yes
BED 2	AFS MC 160/INS/PB	2900	2480	SSW	4653	Yes
KLD	AFS MC 160/INS/PB	2900	4640	WNW	2489	Yes
KLD	AFS MC 160/INS/PB	2900	2623	SSW	1783	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	92.9	0.00
INT-PB	Internal Plasterboard Stud Wall	32.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

7.0 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
None				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		Minimum		
Туре	Fuel type	efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendant lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be considered with the software and these in the design documents. Conditioned a row with a software for the calling for with, e.g. calling fairs; pendant lights, and heating and cooling docts. Conditioned conservation of withon software for the quipted and the pomperites have been deviced by a statistical methods. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica. Energy use This is yout homes rating without call or a statistica.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows listed in ANIERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fasted in ANIERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fasted in AnieRS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fasted in AnieRS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogned terrain with no dostinuctos a g. fat grazing land, cosan-fortlage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogned terrain with no dostinuctos a g. fat grazing land, cosan-fortlage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogned terrain with no dostinuctos a g. fat grazing land, cosan-fortlage, desert, exposed high-rise unit (usually above 10 foors). </th <th>Assessed floor area</th> <th>the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.</th>	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausstandard with for weal social rating and social rating and social rating and social rating and acting and social rating and acting and atteched (Cost Cass 10 abuilding. Definitions can be found at www.abcg.pov.au. Resource category - sposed terrain with numerous, closely spaced distructons below 10m ag, gaus	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a ling aring land, costs to the building the inter unit (usually above 10 floors). Exposure category - sope terrain with numerous, closely spaced distructions below (10m e.g., suburban housing, heavily vegetated bushind ords, teorade units (e.g. above 3 floors). Exposure category - sopeted terrain with numerous, closely spaced distructions below (10m e.g., suburban housing, heavily vegetated bushind ords, teorade bash blooks, teorade units (e.g. above 3 floors). Exposure category - sopeted terrain with numerous, closely spaced distructions so unit on a g, advan industrial areas. Provises hading to building the houtoral plane, e.g. assestratina to constrindowe have assestraton coclustions.	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea singly ventiliation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing flad, ocean-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing flad, ocean-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the cost to the bott flow ag. suburban housing, heavily vegetated bushland areas. Exposure category - suburban ternain with munerous, closely spaced obstructions ore 10 m e.g. oity and industrial areas. Exposure category - suburban ternain with munerous, closely spaced obstructions ore 10 m e.g. oity and industrial areas. Horizontal shading	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no obstructions as a similar height e g, gasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to descriptions below 20m, farmland with scattered sheds, lightly vegetated bush to descriptions over 10 m e g, cult and industrial areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions below 10m e.g. eaves, verandob, spergolis, caports, or overhangs or balonies from upper levels. National Construction Code the ocharabitity by their function and use, and assigns a classification code. NaHERS software models NCC Class 1, 2 or 4 buildings and attached Class 16 building in the ocharabitity particular set of the ocharabitity particular set of the ocharabitity particular set of the ocharabitity and a tasked on t	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a de milar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does on transent value. For example, if the vali colour is unpecified in the doomentation, a provisional value of medium. Provisional value ma assumed value that does on transent value 0. tencommentation and the final	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore (horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore that achieves an at taze orenergy value? Op	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity this is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired conditions in the zone or zones serviced	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.abters.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not hava a diff	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achieves and tez ro energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Stading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted throug	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norticon and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Stading features inc	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-P5F53Y-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A604, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	97.0	Open			
Unconditioned*	5.3	NatHERS climate zone			
Total	102.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.8	16.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-P5F53Y-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A604, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-P5F53Y-01 NatHERS Certificate

6.2 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	tion	NHOUSE NUMER REPORT OF THE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		-	-		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		GARCE ROTAL DEGIN
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging						
Does the dwelling meet the NCC requirement for thermal bridging?						
Insulation installation method						
Has the insulation been installed according to the NCC requirements?						
Building sealing						
Does the dwelling meet the NCC requirements for Building Sealing?						
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)		
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?						
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)				
Does the lighting meet the artificial lighting requirements specified in the NCC?						
Does the hot water system meet the additional requirements specified in the NCC?						
Provisional values* check						
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?						
Other NCC requirements						
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied nclude, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	52.49
BED 1	Bedroom	15.12
ENS 1	Night Time	5.49
BED 2	Bedroom	12.63
BED 3	Bedroom	11.30
BATH	Unconditioned	5.33

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	·····	U-value*		lower limit	upper limit
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-004-04 A	6.16	2900	2400	Sliding	45	WNW	None
BED 2	ALM-004-04 A	6.17	2900	2400	Sliding	45	WNW	None
BED 3	ALM-004-04 A	6.18	2900	2400	Sliding	45	NNE	None
KLD	ALM-004-04 A	6.14	2900	4600	Sliding	60	NNE	None
KLD	ALM-004-04 A	6.15	2900	1900	Sliding	45	ESE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ALM-004-04 A	6.19	2900	4000	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Custom* roof windows

escription	waximum	SHGC*	SHGC substitution tolerance ranges	
			lower limit	upper limit
Skylight DG 3mm LoE 366 / 10.5mm Argon Gap /	2.66	0.24	0.23	0.25
	escription Skylight DG 3mm LoE 366 / 10.5mm Argon Gap /	escription Waximum U-value* Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66	escription Waximum U-value* SHGC* Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66 0.24	escription Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66 0.24 0.23

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	Ν	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3248	WNW		No
BED 1	AFS MC 160/INS/PB	2900	2480	SSW	2008	Yes
BED 2	AFS MC 160/INS/PB	2900	3511	WNW		No
BED 3	AFS MC 160/INS/PB	2900	3141	WNW		No
BED 3	AFS MC 160/INS/PB	2900	3597	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4660	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	2205	ESE	4191	Yes
KLD	AFS MC 160/INS/PB	2900	4292	NNE	2486	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	51.1	0.00
INT-PB	Internal Plasterboard Stud Wall	65.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A604, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficien STC	m cy /	Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment		Minimum		_	
Туре	Fuel type	efficiency / performanc	e	Recomm capacity	hended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [k\	N]
No Whole of Home Data					
Battony schedul	2				

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia antrass. <tr< th=""><th>Annual energy load</th><th>the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.</th></tr<>	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - soubrate Exposure category - soubrate termin wit	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have BWERS (Window Energy Rating Scheme) rating. Default windows windows that are specific type of window product and whose properties have been drived by statistical methods. ERR Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to solely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - protected terrain with murrous, booley spaced obstructions below 10m e.g. quant dividuatial areas. Exposure category - protected terrain with numerous, booley spaced obstructions or 00 m e.g. quant dividuatial areas. Motional Construction Code the NCC groups buildings by their function and use, and assigns a dassification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Clos Closs 10 building in the hoticonal ylane, e.g. enswer, arrandsh, peroplas, carports, or orehmaps or balonnies from upper lev	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Elicany Ratio, messure of how much cooling can be achieved by an ir conditioner for a single WNh of electricity input Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category: exposed terms within the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category: exposed terms within the modelling activate and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category: exposed terms with now obstructions at a similar height a g gasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated built big. Exposure category: protected terms with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category: protected terms with numerous, closely spaced obstructions over 10 me.g. city and industrial areas. Provisional value nervisional value of the obstruction to the out at ware adarssing a close state out at ware adarssing to the out at ware adarssing e gaves. verandate, free ware (ada to ne bound at tww	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Utilicitory Rabio, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Stardard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazm gland. cocan-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - oppon terrain with new obstructions e.g. fill grazm gland. cocan-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily regetated bushinad areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. aeves, variadhis, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or openabile (moveable) area of doors or windows that is used in ventilation calculations. <	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comfirmed by a suitably q	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). out wannings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-QU1YG1-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A605, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	108.1	Open
Unconditioned*	4.7	NatHERS climate zone
Total	112.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	16.3	14.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-QU1YG1-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A605, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





6.9 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construction stage		endeki o autori, skrava
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.9 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	48.83
BED 1	Bedroom	19.23
BED 2	Bedroom	11.48
BED 3	Bedroom	12.50
STUDY	Day Time	6.02
HALL	Day Time	3.67
BATH	Unconditioned	4.71
ENS 1	Night Time	6.37

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
	· · · · · · · · · · · · · · · · · · ·			lower limit	upper limit	
ALM-003-04 A	Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35	
ALM-006-04 A	Aluminium B DG Argon Fill Low Solar Gain low-E -Clear	4.80	0.34	0.32	0.36	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub	stitution ranges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ALM-006-04 A	6.24	2800	900	Fixed	0	ESE	None
BED 1	ALM-006-04 A	6.23	2900	2400	Sliding	45	NNE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A605, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ALM-006-04 A	6.22	2900	2400	Sliding	45	NNE	None
BED 2	ALM-006-04 A	6.21	2900	1900	Sliding	45	WNW	None
BED 3	ALM-006-04 A	6.26	2800	2400	Sliding	28	E	None
KLD	ALM-006-04 A	6.20	2900	4000	Sliding	60	NNE	None
STUDY	ALM-003-04 A	6.25	2800	1600	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC subs	titution anges	
			•	lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description		SHGC*	SHGC substitution tolerance ranges	
		U-value*	U-value*	lower limit	upper limit
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	ENE	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

* Refer to glossary.



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	5190	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	3396	NNE		No
BED 2	AFS MC 160/INS/PB	2900	2969	NNE		No
BED 2	AFS MC 160/INS/PB	2900	2205	WNW	4816	Yes
BED 3	AFS MC 160/INS/PB	2900	2820	Е		Yes
BED 3	AFS MC 160/INS/PB	2900	1033	S		Yes
BED 3	AFS MC 160/INS/PB	2900	3093	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	4770	NNE	2486	Yes
STUDY	AFS MC 160/INS/PB	2900	2736	ESE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	49.3	0.00
INT-PB	Internal Plasterboard Stud Wall	84.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.8	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed	
KLD	1	Exhaust Fan	260	Sealed	
STUDY	1	Downlight	190	Sealed	
Ceiling fans					
Location		Quantity	Diamete	er (mm)	

None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

No Whole of Home Data

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					
Pool / spa equipment					
Turne		Minimum	Re	commended	

Type Fuel type efficiency / capacity capacity

* Refer to glossary.



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freemastation Rating Council Assesses floor and the floor area modeling in the software for the purpose of the NMHERS assessment. Mole, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area assessment. Note within a dowling and the software assessment floor within a dowling in the software assessment floor withing. Software predicts and shore a MERS (Window Energy Rating Scheme) rating. COP Coefficient of parformance Custom windows Windows listent AMHERS dowling the are asvaliable on the market in Australia and have a VERS (Window Energy Rating Scheme) rating. Energy use This is your horters rating without ado as pacefic type of window produce and whose a properties have been darvad by statistical methods. ERR Energy use This is your horters rating without ado and the cost as a down window coduce and whose a software and must not be modeling as a software and must not be modeled as a door when opening to a minimally ventilated combon: in a Class 2 building. Exposure category exposed terms with no cobructions e a simi forth (in outpace) as a software floor as a software and must not be modeled as a door when opening to a minimally ventilated mastate as a bababe and must no	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the foor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling pertrations failures that requires a penetration the exiling with small holes through the celling for winn, e.g. celling thans; pandare lights, and healing and cooling ducts. Conditioned a zone within a deling that is expected to require healing and cooling ducts. Coefficient of performance Coefficient of performance Coefficient of performance Entry Efficiency Rate, measure of how much cooling can be achieved by an alr conditioner for a single NMh of electricity input Energy use This is yooi homes rating without solar or catatines. Energy use The alr cost to cost performance Exercy use The alr cost to cost performance Energy use This is yooi homes rating without solar or catatines. Energy use The alr cost to cost performance Exercy use The alr cost to cost adapties below Exercy use algory - sopent train with modestructors at a single NMh of electricity input Exercs all cost and the cost and the single diment of the algore diment of the well states of the vicing and adapties below Exercs all cost and the diment of the single diment of the single diment of the well states of the vicing adapties below Exercs all co	AFRC	Australian Fenestration Rating Council
Caling penetrations features that require a penetration to the ceiling, including downlingts, sends tigs, and heating and occing outs. Conditioned a zone within a dwelling that is expected to require heating and occing outs. Including and penetrations. In some circumstances it will include garages. COP Coefficient of penformance Coefficient of penformance Costom windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Energy value The end costs occiely including, but not limited to, costs to the building user, the environment and energy networks (sis defined in the ABCB Housing Provisions Standard). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costom windows windows list of in ABHERS software that are available on the market in Australia and have a WERS (Window Energy Raling Software) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. Energy use The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door there signify ventilation benefits in the modelling software end must not be modelled as a door when opening to a minimality ventilated corridor in a Class 2 building. Exposure category - sopped terrain with no obstructions as 1 a final grazing land, cocan-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubartan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubardan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubardan housing, heavity wegetaled builtand eras. Exposure category - sopped	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Distant windows windows listed in what EES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERF Energy Efficiency Ratin, messure of how much cooling can be achieved by an air conditione for a single KMh of electricity input Energy usale The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories open categories below Exposure category - exposed terrain with no obstructions a g, flat grazing land, costs to the building line with (usually above 10 floors). Exposure category - open terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ocks, elevated units (e.g, above 3 floors). Exposure category - usposed terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ock 00m g, and	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type dividue you product and windows properties have been divend by statistical methods. ERP This syour hornes rating without solar or batteries. Energy use This syour hornes rating without solar or batteries. Energy use The solar horne costs to dive houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Extrance door Itemas and your houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - expend ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - suburban ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Roticol Lass Category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Rotational shading feature proxide d	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an ir conditioner for a single WNh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door These signify vertiliation beends in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure actegory - exposed Entransition of the set of the	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The is syor hores rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Stardard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - opposed terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - oppon terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - suburban terrain with numerous, closely spaced obstructions or 10 m.g. g. divy and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions or 10 m.g. g. divy and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variandish, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings, by therefunction and use, and assigns a dasfigriad a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class <t< th=""><th>Default windows</th><th>windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.</th></t<>	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., flat grazing land, ocean frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - open terrain with no unercus, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions ore 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal provides. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Net zero home a hore that achieves a net zero energy value? Opening percentage the openability percentage or operable (movisined value. For example, if the valitolous in uspecific in the doou	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door Press signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated conidor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bigh-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bight-rise unit (usually above 10 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily regelated bushind areas. Horizontal shading feature provides shading to the building. In the houzontal plane, e.g. eaves, varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code Class 10a buildings. Definitons can be found at www.abcb.gov.au. Net zero home a home that achieves an at zare are construction doe. Horizontal Plane, e.g. eaves. varandhis, peogradis, carports, or overhangs or balconies in the concentality. Recommended capacity the copenability percentage or openable (moveable) area of doors or windows	Energy use	This is your homes rating without solar or batteries.
Entrance doorthese signify ventilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.Exposure category - exposedterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors).Exposure category - openterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 m, farmand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).Exposure category - rotectedterrain with numerous, closely spaced obstructions below 10 m e.g. suburban housing, heavily vegetated bushland areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandshs, genages, carports, or overhangs or balconies from upper levels.National Construction Codethe VCC groups buildings by thrif function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov au.Recommended capacitythe openability percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations.Provisional valuea assumed value that does not represent an actual value. For example, if the wall solution calculations.Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired conflot conflions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sui	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed Exposure category - exposed terrain with no obstructions e.g. fall grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, familand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCR groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 0 a buildings. Definitions can be found at www abbc.gov.au. Net zero home a home that achieves an et zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are cultican in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a tercommended to y a suitable value. If provides insulative properties. Recommended capacity this is the	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ceean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with new obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (the NCC groups buildings can be found at www.abcb.gov.au. Nate zero home a home that achieves a net zero energy value*. Provisional value an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled Acceptable provisional values are outlined in the NAHERS Technical Note and can be found at www.nathers.gov.au Reformended capacity this is the capacity or size of equipment that is recommended by NaHERS to achieve the desired comfort conducts in the instal selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gin coefficie	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 horos). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Horizontal shanding feature provides shading to the building in the horizontal plane, e.g. eves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achiever the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selection sing should be confirmed by a suitabby qualified person. Roof wi	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cleves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Rod window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the faction of incident solar radiation admitted through a window, sub diffuery transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. <tr< th=""><th>Exposure category - protected</th><th>terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.</th></tr<>	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁷ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot direcity transmitte as well as absorbed and subs	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the Nath/ERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by Nath/ERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and cellings. When combined with an appropriate aingap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Skylight (also known as roof [light (SHGC)] for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-s	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded uni with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought a	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 2.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 2.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- 	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC isSkylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-1S75SU-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A606, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086			
Lot/DP	1-2-3/213608-24/25713			
NCC Class*	2			
Floor/all Floors	10 of 1 floors			
Туре	New			

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	76.2	Open
Unconditioned*	4.1	NatHERS climate zone
Total	80.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	31.4	5.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-1S75SU-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A606, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

ATHONWARE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-1S75SU-01 NatHERS Certificate

6.1 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ wor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builde	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check		-	I		
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		'	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A606, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		dodace facebac, ad next
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	38.56
BED 1	Bedroom	17.77
ENS 1	Night Time	6.41
BED 2	Bedroom	10.82
STUDY	Day Time	2.67
BATH	Unconditioned	4.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value* lower limit ເ	upper limit			
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	6.30	2800	1400	Awning	58	ESE	None
BED 2	ATB-003-02 B	6.29-A	2800	1200	Awning	58	ESE	None
BED 2	ATB-004-04 B	6.29-B	2800	1200	Fixed	0	ESE	None
BED 2	ATB-004-04 B	6.28	2800	2400	Sliding	45	SSW	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-04 B	6.27	2900	3800	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
	······			lower limit upper limit
None				

.....

Custom* roof windows

Window Description			SHGC substitution tolerance ranges		
	U-value*	lower limit	upper limit		
Skylight DG 3mm LoE 366 / 10.5mm Argon Gap /	2.66	0.24	0.23	0.25	
	escription Skylight DG 3mm LoE 366 / 10.5mm Argon Gap /	escription Waximum U-value* Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66	escription Waximum U-value* SHGC* Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66 0.24	escription Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 2.66 0.24 0.23	

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	SE	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1602	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2999	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	3006	SSW	4002	Yes
BED 2	AFS MC 160/INS/PB	2900	2835	NNE		Yes
KLD	AFS MC 160/INS/PB	2900	4010	ESE	3018	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	73.2	0.00
INT-PB	Internal Plasterboard Stud Wall	58.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency / performance		Recomr capacity	nended /	
No Whole of Home Data						

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freemastation Rating Council Assesses floor and the floor area modeling in the software for the purpose of the NMHERS assessment. Mole, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area assessment. Note within a dowling and the software assessment floor within a dowling in the software assessment floor withing. Software predicts and shore a MERS (Window Energy Rating Scheme) rating. COP Coefficient of parformance Custom windows Windows listent AMHERS dowling the are asvaliable on the market in Australia and have a VERS (Window Energy Rating Scheme) rating. Energy use This is your horters rating without ado as pacefic type of window produce and whose a properties have been darvad by statistical methods. ERR Energy use This is your horters rating without ado and the cost as a down window coduce and whose a software and must not be modeling as a software and must not be modeled as a door when opening to a minimally ventilated combon: in a Class 2 building. Exposure category exposed terms with no cobructions e a simi forth (in outpace) as a software floor as a software and must not be modeled as a door when opening to a minimally ventilated mastate as a bababe and must no	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the foor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling pertrations failures that requires a penetration the exiling with small holes through the celling for winn, e.g. celling thans; pandart lights, and healing and cooling ducts. Conditioned a zone within a deling that is expected to require healing and cooling ducts. Coefficient of performance Coefficient of performance Coefficient of performance Entry Efficiency Rate, measure of how much cooling can be achieved by an alr conditioner for a single NMh of electricity input Energy use This is yooi homes rating without solar or catatines. Energy use The alr cost to cost rating without solar or catatines. Energy use Energy rating or homes rating without solar or catatines. Energy use Energy value The not cost to cost adaptedia below Exposure category - sopent termin with moreovance adaptedia do cost not rating without solar or catating with solar and more adaptedia do cost not rating without solar or catating with solar adaptedia do cost watco besof without performance	AFRC	Australian Fenestration Rating Council
Caling penetrations features that require a penetration to the ceiling, including downlingts, sends tigs, and heating and occing outs. Conditioned a zone within a dwelling that is expected to require heating and occing outs. Including and penetrations. In some circumstances it will include garages. COP Coefficient of penformance Coefficient of penformance Costom windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Energy value The end costs occiely including, but not limited to, costs to the building user, the environment and energy networks (sis defined in the ABCB Housing Provisions Standard). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - exposedd	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costom window windows list of in ABHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list of in ABHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door there signify ventilation benefits in the modelling software end must not be modelled as a door when opening to a minimality ventilated corridor in a Class 2 building. Exposure category - sopped terrain with no obstructions as 1 a final grazing land, cocan-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - sopped terrain with numerous, closely spaced obstructions below Y0m ag, subtratan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below Y0m ag, subtratan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below Y0m ag, subtratan housing, heavity wegetaled builtand eras. Exposure category - sopped	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Distant windows windows listed in what EES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERF Energy Efficiency Ratin, messure of how much cooling can be achieved by an air conditione for a single KMh of electricity input Energy usale The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories open categories below Exposure category - exposed terrain with no obstructions a g, flat grazing land, costs to the building line with (usually above 10 floors). Exposure category - open terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ocks, elevated units (e.g, above 3 floors). Exposure category - usposed terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ock 00m g, and	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type dividue you product and windows properties have been divend by statistical methods. ERP This syour hornes rating without solar or batteries. Energy use This syour hornes rating without solar or batteries. Energy use The solar horne costs to dive houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Extrance door Itemas and your houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - expend ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - suburban ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Roticol Lass Category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Rotational shading feature proxide d	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an ir conditioner for a single WNh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door These signify vertiliation beends in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure actegory - sposed Iteran with ow obstructions a fait grazing land, coean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open ternain with no volstructions a fait grazing land, coean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - spoted ternain with numerous, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected ternain with numerous, dosely spaced obstructions own 10m e.g. oity and industrial areas. Exposure category - protected ternain with numerous, dosely spaced obstructions own 10m e.g. oity and industrial areas. Exposure category - protected ternain with numerous, dosely spaced obstructions own 10m e.g. oity and industrial areas. Exposure category - protected <th< th=""><th>Custom windows</th><th>windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.</th></th<>	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The is syor hores rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Stardard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - opposed terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - oppon terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - suburban terrain with numerous, closely spaced obstructions or 10 m.g. g. dity and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions or 10 m.g. g. dity and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings, birth function and use, and assigns a dasficiant ocide. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., flat grazing land, ocean frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - open terrain with no unercus, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions ore 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal provides. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Net zero home a hore that achieves a net zero energy value? Opening percentage the openability percentage or operable (movisined value. For example, if the valitolous in uspecific in the doou	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door Press signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated conidor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bigh-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bight-rise unit (usually above 10 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily regelated bushind areas. Horizontal shading feature provides shading to the building. In the houzontal plane, e.g. eaves, varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code Class 10a buildings. Definitons can be found at www.abcb.gov.au. Net zero home a home that achieves an at zare are contend in the value flat down at the second at www.abcb.gov.au. Recommended capacity the openability percentage or openable (moveable) area of doors or windows that is used in ventilation calculations. provisional value <th>Energy use</th> <th>This is your homes rating without solar or batteries.</th>	Energy use	This is your homes rating without solar or batteries.
Entrance doorthese signify ventilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.Exposure category - exposedterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors).Exposure category - openterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 m, farmand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).Exposure category - rotectedterrain with numerous, closely spaced obstructions below 10 m e.g. suburban housing, heavily vegetated bushland areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandshs, persons, or overhangs or balconies from upper levels.National Construction Codethe VCC groups buildings by thrif function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov au.Recommended capacityan assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of meduri must be modelled. Acceptable provisional values are confineed by a suitably qualified person.Reflective wrap (also known as foi)can be properable (moveable) area of doors or windows that is used in ventilation calculations.Roor windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar lig	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed Exposure category - exposed terrain with no obstructions e.g. fall grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, familand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCR groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 0 a buildings. Definitions can be found at www abbc.gov.au. Net zero home a home that achieves an et zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are cultican in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a tercommended to y a suitable value. If provides insulative properties. Recommended capacity this is the	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ceean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with new obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (the NCC groups buildings can be found at www.abcb.gov.au. Nate zero home a home that achieves a net zero energy value*. Provisional value an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled Acceptable provisional values are outlined in the NAHERS Technical Note and can be found at www.nathers.gov.au Reformended capacity this is the capacity or size of equipment that is recommended by NaHERS to achieve the desired comfort conducts in the instal selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gin coefficie	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 horos). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Horizontal shanding feature provides shading to the building in the horizontal plane, e.g. eves, verandahs, perceptias, carpots, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achiever the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selection sing should be confirmed by a suitabby qualified person. Roof wi	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.Net zero homea home that achives and tez ore energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cleves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Rod window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the faction of incident solar radiation admitted through a window, sub diffuery transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. <tr< th=""><th>Exposure category - protected</th><th>terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.</th></tr<>	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁷ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot direcity transmitte as well as absorbed and subs	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the Nath/ERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by Nath/ERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and cellings. When combined with an appropriate aingap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Skylight (also known as roof [light (SHGC)] for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-s	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded uni with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought a	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 2.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 2.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- 	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC isSkylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-V88HAW-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A607, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	70.6	Open			
Unconditioned*	3.5	NatHERS climate zone			
Total	74.1	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	27.0	8.9			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-V88HAW-01.

When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A607, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATION WIDE HERE ALL SEE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





6.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ syor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	35.71
BED 1	Bedroom	13.67
ENS 1	Night Time	4.31
BED 2	Bedroom	12.66
BATH	Day Time	4.21
LAUNDRY	Unconditioned	3.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-02 B	AI Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54

Custom* windows

Window ID Window Description	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-02 B	6.34	2800	1600	Awning	58	ESE	None
BED 2	ATB-004-04 B	6.33	2800	2400	Sliding	22	SE	None
BED 2	ATB-004-04 B	6.32	2800	2400	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-006-03 B	6.31	2900	3802	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges
		U-value*		lower limit upper limit
None				

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit up	upper limit
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25
	Shin Glear				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	SSW	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2411	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	1169	NE		Yes
BED 2	AFS MC 160/INS/PB	2900	2799	SE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3181	NNE	4045	Yes
KLD	AFS MC 160/INS/PB	2900	4022	ESE	3018	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	74.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.7	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
LAUNDRY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Downlight	190	Sealed
LAUNDRY	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
None				



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um / ncy / d	Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recomm capacity	ended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [kV	vj
No Whole of Home Data					
Battery schedul	е				
Туре		Storage Capacity	/ [kWh]		
No Whole of Home Data					



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-T68MNG-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	A608, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	95.6	Open			
Unconditioned*	3.1	NatHERS climate zone			
Total	98.7	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.4	10.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-T68MNG-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for A608, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



6.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	tion	HOUSE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ syor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	Indeko akino, Kustak
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	9.63
KLD	Kitchen/Living	35.13
BED 1	Bedroom	17.03
ENS 1	Night Time	6.18
BED 2	Bedroom	11.61
LAUNDRY	Unconditioned	3.09
BATH	Day Time	4.40
BED 3	Bedroom	11.63

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	6.37	2900	2400	Sliding	45	ESE	None
BED 1	ATB-004-03 B	6.38	2900	1000	Fixed	0	SSW	None
BED 2	ATB-004-03 B	6.39	2900	2400	Sliding	45	SSW	None


Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-03 B	6.40	2900	2400	Sliding	45	SSW	None
ENS 1	ATB-004-03 B	6.36	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	6.35	2900	4000	Sliding	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
				lower limit upper limit
None				

Custom* roof windows

Window ID	Window Description M	Maximum	SHGC*	shild substitution tolerance ranges		
		U-value*		lower limit	upper limit	
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25	

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	W	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	absorptance	Colour	insulation (R-value)	wall wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1617	SSW	2552	Yes
BED 1	AFS MC 160/INS/PB	2900	3280	ESE	2908	Yes
BED 1	AFS MC 160/INS/PB	2900	3474	SSW	2552	Yes
BED 2	AFS MC 160/INS/PB	2900	2945	SSW	2552	Yes
BED 3	AFS MC 160/INS/PB	2900	2953	SSW	2552	Yes
BED 3	AFS MC 160/INS/PB	2900	1999	WNW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2632	ESE	2896	Yes
KLD	AFS MC 160/INS/PB	2900	4036	ESE	2892	Yes
KLD	AFS MC 160/INS/PB	2900	2826	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	45.9	0.00
INT-PB	Internal Plasterboard Stud Wall	92.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.1	N/A	0.15	Timber (12mm)
LAUNDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
LAUNDRY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	3	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	1	Exhaust Fan	260	Sealed
LAUNDRY	1	Downlight	190	Sealed
LAUNDRY	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
None				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um /	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy/ c	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performanc	e	Recomm capacity	ended

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for A608, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-5HBQF2-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG01, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	78.0	Suburban			
Unconditioned*	4.2	NatHERS climate zone			
Total	82.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	16.2	10.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-5HBQF2-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-5HBQF2-01 NatHERS Certificate

7.3 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		NUEL ROUCE STREET
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.36
KLD	Kitchen/Living	35.58
BED 1	Bedroom	14.50
ENS 1	Night Time	5.75
BED 2	Bedroom	10.85
BATH	Unconditioned	4.25

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	U-value*	0.100	lower limit	upper limit		
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.07	2800	600	Awning	60	SSW	None
BED 1	ATB-003-01 B	G.06	2800	700	Awning	60	SSW	None
BED 1	ATB-004-02 B	G.05	2900	2802	Sliding	45	WNW	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	G.09	2800	2400	Awning	45	SSW	None
ENS 1	ATB-004-01 B	G.08	970	900	Fixed	0	SSW	None
KLD	ATB-004-01 B	G.03	2900	4000	Sliding	60	WNW	None
KLD	ATB-003-01 B	G.04	2900	1200	Awning	60	SSW	None

Roof window type and performance value

Default* roof windows

	\ A /:	De contra di	Maximum		Maximur			SHGC sub	ostitution ranges
window ID	vvina	ow Descriptio	on			U-value*	SHGC	lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	Wind	ow Docorinti				Maximum	8466*	SHGC sub tolerance	ostitution ranges
window iD	wina	ow Description	<i>)</i>			U-value*	3000	lower limit	upper limit
None									
Roof wii	ndow scl	hedule							
Location	Win ID	dow	Window no.	Openir %	ng Heig (mm)	ht Width) (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d perform	ance						
Skylight ID	51		Skylight de	scription	1				
None									
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Refle	ctance
None									
External	l door sc	hedule							
Location			Height	(mm)	Width	(mm) Op	ening %	Orier	ntation
None									



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4141	SSW		Yes
BED 1	AFS 160/INS/PB	2900	2997	WNW	3080	Yes
BED 2	AFS 160/INS/PB	2900	3620	SSW		Yes
BED 2	AFS 160/INS/PB	2900	1975	ESE		Yes
ENS 1	AFS 160/INS/PB	2900	3201	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1499	SSW	3168	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	50.3	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	2.50	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	2.50	Tile (8mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.4	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
				Minimum	Recommended
Туре	Location	I	Fuel Type	efficiency / performance	capacity
No Whole of Home Data					
Hot water system					
_		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	nended
Туре	Fuel type	efficiency / performanc	e	capacity	1
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k\	/]
No Whole of Home Data					
Battery schedul	e				

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-1NKFJF-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	83.1	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	87.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.6	6.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-1NKFJF-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-1NKFJF-01 NatHERS Certificate

|--|



Certificate check	Approva	l stage	Construc stage	baller far NC selent	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con surv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.5 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		al stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	19.89
KLD	Kitchen/Living	32.04
BED 1	Bedroom	15.88
BED 2	Bedroom	10.82
BATH	Unconditioned	4.28
ENS 1	Night Time	4.52

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	· · · · · · · · · · · · · · · · · · ·	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.13	2900	1200	Awning	60	WNW	None
BED 2	ATB-004-02 B	G.12	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	G.10	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	G.11	2900	1500	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	1		Maximu		um .* Si	-IGC*	SHGC sub tolerance	stitution ranges
						U-value	; ~		lower limit	upper limit
None										
Custom* roo	f windows								SHGC sub	stitution
Window ID	Wind	ow Descriptior	1			Maximu U-value	um ə* SI	-IGC∗	tolerance	ranges upper limit
None										
Roof win	dow sch	nedule								
Location	Wine ID	dow	Window no.	Opening %	g Heigh [:] (mm)	t Width (mm)	ı Or ati	rient- ion	Outdoor shade	Indoor shade
None										
Skylight Skylight ID	type and	l performa	INCE Skylight de	scription						
None										
Skylight	schedule	9								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	D	iffuser	. Shaft Reflee	ctance
None										
External	door sc	hedule								
Location			Height	(mm)	Width (n	nm)	Openi	ng %	Orien	tation
None										
External	wall typ	e								
Wall ID		Wall Type			Sola abso	ar orptance	Wall Colou	r	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm	FCF/INS/PB		0.50		Mediu	m	3.00	No
External	wall sch	nedule								
Location		Wall ID		Height (mm)	Width (mm)	o Orien ation	nt- 1	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature

2900

1448

WNW

269

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3298	Yes
BED 2	AFS 160/INS/PB	2900	2287	NNE	288	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1580	Yes
KLD	AFS 160/INS/PB	2900	1717	NNE	3387	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.9	0.00
INT-PB	Internal Plasterboard Stud Wall	63.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.9	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	2.50	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.9	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
	Location	Location Fuel Type	Location Fuel Type Minimum Location Fuel Type efficiency / performance Location Fuel Type Minimum efficiency / performance performance



Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Hot water system		 		

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-7V8RIR-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG03, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	83.5	Suburban			
Unconditioned*	4.3	NatHERS climate zone			
Total	87.8	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	25.6	5.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-7V8RIR-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

#HR-7V8RIR-01 NatHERS Certificate

6.9 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construct stage		ıction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	llder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Col	Bui	Col	õ
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Floor type</i> ' table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.9 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		basica kurok, kirino
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
BED 1	Bedroom	15.92
BED 2	Bedroom	10.91
BATH	Unconditioned	4.28
KLD	Kitchen/Living	32.05
ENTRY/HALL	Day Time	19.94
ENS	Night Time	4.68

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
			•	lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.17	2900	1200	Awning	60	WNW	None
BED 2	ATB-004-02 B	G.16	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	G.14	2900	4000	Sliding	60	WNW	None
KLD	ATB-004-02 B	G.15	2900	1500	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

Window ID	Windo	Window Description Maxim		Maximum	¹ SHGC*	SHGC sub tolerance	stitution ranges		
		•				U-value*		lower limit	upper limit
None									
Custom* roo	f windows							SHGC sub	stitution
Window ID	Windo	ow Description	1			Maximum U-value*	SHGC*	tolerance	ranges
None								lower limit	upper limit
Roof win	dow sch	nedule							
Location	Wind ID	dow	Window no.	Opening %) Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	l performa	nce Skylight de	scription					
None									
Skylight	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	Shaft Reflee	ctance
None									
External	door sci	hedule							
Location			Height	(mm)	Width (mi	m) O	pening %	Orien	tation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	W ptance Co	'all olour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm	FCF/INS/PB		0.50	М	edium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orient- ation	Horizo shadii projeo	ontal ng feature* tion (mm)	Vertical shading feature

2900

1448

WNW

* Refer to glossary.

BED 1

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2998	WNW	3289	Yes
BED 2	AFS 160/INS/PB	2900	2276	SSW	244	Yes
KLD	AFS 160/INS/PB	2900	4024	WNW	1586	Yes
KLD	AFS 160/INS/PB	2900	1703	SSW	3343	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	83.6	0.00
INT-PB	Internal Plasterboard Stud Wall	64.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	2.50	Tile (8mm)
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.9	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	2.50	Timber (12mm)
ENS	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	2.50	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.4	N/A	2.50	Timber (12mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction			Bulk insu (R-va	ation alue)	Reflective wrap*
None						
Ceiling penetrations*						
Location		Quantity	Туре	Diameter (mn	n) Se /ui	aled nsealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS	1	Downlight	190	Sealed
ENS	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	5	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

6.9 Star Rating as of 10 Apr 2024



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	um 4	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
· · · · · · · · · · · · · · · · · · ·			

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-O30R2R-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG04, 116-120 Frenchs Forest Rd
	FIERCIS FORESI, INSW, 2000
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	50.4	Suburban
Unconditioned*	7.1	NatHERS climate zone
Total	57.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	14.3	6.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-O30R2R-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



certificate.



7.9 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion	HOUSE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	rsent authority/ veyor checked	lder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Bui	Cor sur	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			-		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.9 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	7.29
KLD	Kitchen/Living	31.87
BED 1	Bedroom	11.24
BATH	Unconditioned	7.09

Window and glazed door type and performance

Default* windows

Window ID Window De	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges	
		U-value*	lower limit upper limit	

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	G.20	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	G.18	2900	3600	Sliding	45	WNW	None
KLD	ATB-004-04 B	G.19	2900	1200	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	low Description	1			Maximu	* SHGC*	SHGC substitution tolerance ranges		
						U-value		lower limit	upper limit	
None										
Custom* roc	of windows									
Window ID	Wind	low Description	1			Maximu	m SHGC*	SHGC substitutio		
						U-value	* 01100	lower limit	upper limit	
None										
Roof wir	ndow sci	hedule								
Location	Win ID	ldow	Window no.	Openin %	ig Heigh (mm)	t Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None										
Skylight	type and	d performa	Ince Skulight de	oorintion						
None			Skylight de	scription						
		,								
Skylight	SCNEGUI Skylight	C Skylight	Skylight shaft	Area	Orient-	Outdoor		Shaft		
Location	ID	No.	length (mm)	(m ²)	ation	shade	Diffuse	r Reflec	ctance	
None										
External	door sc	chedule								
Location			Height	(mm)	Width (n	nm)	Opening %	Orien	tation	
None										
External	wall typ	<i>be</i>								
Wall ID		Wall Type			Sola abso	ar orptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*	
AFS 160/INS	/PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No	



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	WNW	3061	Yes
KLD	AFS 160/INS/PB	2900	3603	WNW	1570	Yes
KLD	AFS 160/INS/PB	2900	1491	NNE	2811	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	82.1	0.00
INT-PB	Internal Plasterboard Stud Wall	24.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.15	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	2.50	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.0	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ency /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-O8BZ55-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG05, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	73.7	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	77.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	4.5	12.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-O8BZ55-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG05, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEAVENING WIDE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-O8BZ55-01 NatHERS Certificate

8.4 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging						
Does the dwelling meet the NCC requirement for thermal bridging?						
Insulation installation method						
Has the insulation been installed according to the NCC requirements?						
Building sealing						
Does the dwelling meet the NCC requirements for Building Sealing?						
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)		
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?						
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)				
Does the lighting meet the artificial lighting requirements specified in the NCC?						
Does the hot water system meet the additional requirements specified in the NCC?						
Provisional values* check						
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?						
Other NCC requirements						
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.						



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	5.48
KLD	Kitchen/Living	31.25
ENS 1	Night Time	4.41
BATH	Unconditioned	4.06
BED 1	Bedroom	12.44
BED 2	Bedroom	13.67
HALL	Day Time	6.45

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.23	1900	2400	Awning	45	WNW	None
BED 2	ATB-003-01 B	G.24	1900	2400	Awning	45	WNW	None
KLD	ATB-004-02 B	G.21	2900	6000	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-003-01 B	G.22	2800	1100	Awning	60	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance r	stitution anges
		U-value*		lower limit	upper limit
None					
Custom* roof w	indows				

Window ID	Vindow ID Window Description Maxim U-valu	Maximum U-value*	SHGC*	SHGC sub tolerance r	stitution anges
				lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3009	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2998	WNW		Yes
BED 2	AFS 160/INS/PB	2900	2568	SSW	6881	Yes
KLD	AFS 160/INS/PB	2900	6075	NNE	2419	Yes
KLD	AFS 160/INS/PB	2900	5476	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	62.3	0.00
INT-PB	Internal Plasterboard Stud Wall	67.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.15	Timber (12mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No
KLD	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 2	1	Exhaust Fan	350	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Type Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
---------------	-----------	--	----------------------

* Refer to glossary.



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency / performance		Recomr capacity	nended /	
No Whole of Home Data						

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-2OX57I-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG06, 116-120 Frenchs Forest Rd
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type	
Conditioned*	67.9	Suburban	
Unconditioned*	4.1	NatHERS climate zone	
Total	72.1	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	3.1	6.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-2OX57I-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG06, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-2OX57I-01 NatHERS Certificate

9.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approva	l stage	age Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check				·	
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.4 Star Rating as of 10 Apr 2024



ertificate check Approval stage		Approval stage Construction stage		tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the <i>'Onsite Renewable Energy schedule'</i> on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	39.89
BED 1	Bedroom	13.10
ENS 1	Night Time	4.41
BED 2	Bedroom	10.51
PWD	Unconditioned	4.14

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	indow ID Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.28	2800	600	Awning	60	NNE	None
BED 2	ATB-004-02 B	G.26	2900	2400	Sliding	45	NNE	None
BED 2	ATB-004-01 B	G.27	1070	1450	Fixed	0	ESE	None
KLD	ATB-004-02 B	G.25	2900	4000	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	w Description			Maximun		SHGC sub tolerance	estitution ranges
		-				U-value ²	•	lower limit	upper limit
None									
Custom* roo	f windows							SHGC sub	estitution
Window ID	Winde	ow Descriptior	ı			Maximu U-value*	m SHGC*	tolerance	ranges
						e value		lower limit	upper limit
None									
Roof win	dow sch	nedule							
Location	Wine ID	dow	Window no.	Opening %	y Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	INCE Skylight de	scription					
None			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
Skylight	schedule	9							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) C	Opening %	Orier	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	vptance (Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	'PB	AFS 160mm	FCF/INS/PB		0.50	Ν	Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	t- Horizo shadi projeo	ontal ng feature* ction (mm)	Vertical shading feature

2900

1296

NNE

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG06, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2955	NNE	2430	Yes
BED 2	AFS 160/INS/PB	2900	2997	ESE		Yes
KLD	AFS 160/INS/PB	2900	4031	NNE	2430	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	71.3	0.00
INT-PB	Internal Plasterboard Stud Wall	49.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	0.15	Timber (12mm)
PWD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed

...

9.4 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	3	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
PWD	1	Downlight	190	Sealed
PWD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ency /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG06, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-TMKAG8-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG07, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	45.6	Suburban			
Unconditioned*	5.9	NatHERS climate zone			
Total	51.5	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	3.2	7.5		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-TMKAG8-01. When using either link, ensure you are visiting http://www.hero-software. com.au



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG07, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

9.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling penetrations</i> ' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	31.29
BED	Bedroom	14.29
BATH	Unconditioned	5.93

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value* SHGC*	SHGC*	SHGC substitution tolerance ranges		
			lower limit	upper limit		
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Nindow Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED	ATB-003-01 B	G.29	2800	1100	Awning	60	NNE	None
KLD	ATB-004-02 B	G.30	2900	4200	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows						
Window ID	Window Description	Maximum	ⁿ SHGC*	SHGC substitution SHGC* tolerance ranges		stitution ranges
		U-value*		lower limit	upper limit	
None						

* Refer to glossary.



Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution C* tolerance ranges	
		U-value*		lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED	AFS 160/INS/PB	2900	1304	NNE		Yes
KLD	AFS 160/INS/PB	2900	4200	NNE	2403	Yes
KLD	AFS 160/INS/PB	2900	2997	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation	
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	64.9	0.00	

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG07, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086


...

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	33.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Tile (8mm)
BED	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED	2	Downlight	190	Sealed
KLD	4	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um /	Assessed
Туре	Fuel type	Water	efficie	ncy/	daily load
		CER Zone	STC		litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performar	/ ice	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedul	e			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-TJZ4LJ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG08, 116-120 Frenchs Forest Rd
LOUDP	1-2-3/213000-24/23713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	72.6	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	76.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	22.3	3.4		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-TJZ4LJ-01. When using either link, ensure you are visiting http://www.hero-software. com.au



NATIONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Cost:



No Whole of Home performance assessment conducted for this certificate.

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG08, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

#HR-TJZ4LJ-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		DARC AURIC CROE
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	tisfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	12.74
KLD	Kitchen/Living	32.26
BED 1	Bedroom	12.16
ENS 1	Night Time	4.44
BED 2	Bedroom	10.99
BATH	Unconditioned	4.22

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	G.34	2800	2400	Sliding	45	ESE	None
BED 2	ATB-004-02 B	G.33	2800	2400	Sliding	45	ESE	None
KLD	ATB-004-02 B	G.31	2900	6400	Sliding	45	NNE	None
KLD	ATB-003-01 B	G.32	2800	1100	Awning	60	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	Window Description		Maximum	m SHGC*	SHGC substitution tolerance ranges			
		-				U-value ²	•	lower limit	upper limit
None									
Custom* roo	f windows							SHGC sub	estitution
Window ID	Winde	ow Descriptior	ı			Maximu U-value*	m SHGC*	tolerance	ranges
						e value		lower limit	upper limit
None									
Roof win	dow sch	nedule							
Location	Wine ID	dow	Window no.	Opening %	y Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	INCE Skylight de	scription					
None			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
Skylight	schedule	9							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) C	Opening %	Orier	itation
None									
External	wall type	е							
Wall ID		Wall Type			Solar absor	vptance (Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	'PB	AFS 160mm	FCF/INS/PB		0.50	Ν	Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	t- Horizo shadi projeo	ontal ng feature* ction (mm)	Vertical shading feature

2900

ESE

3573

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG08, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3598	SSW	5301	Yes
BED 2	AFS 160/INS/PB	2900	3606	ESE	712	Yes
ENS 1	AFS 160/INS/PB	2900	1236	SSW	5301	Yes
KLD	AFS 160/INS/PB	2900	6435	NNE	2403	Yes
KLD	AFS 160/INS/PB	2900	5013	ESE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	38.8	0.00
INT-PB	Internal Plasterboard Stud Wall	66.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.3	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	
No Whole of Home Data	

Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-86A1X5-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG09, 116-120 Frenchs Forest Rd Frenchs Forest NSW 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	78.2	Suburban	
Unconditioned*	5.0	NatHERS climate zone	
Total	83.2	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	26.6	7.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-86A1X5-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG09, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:







#HR-86A1X5-01 NatHERS Certificate

6.5 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	e Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		-	-		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage			Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other	

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	47.58
BED 1	Bedroom	14.68
ENS 1	Night Time	5.13
BED 2	Bedroom	10.83
BATH	Unconditioned	4.98

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution _{C*} tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.37	2800	1600	Awning	60	ESE	None
BED 2	ATB-003-01 B	G.36	2800	2400	Awning	45	SE	None
KLD	ATB-004-01 B	G.35	2900	3800	Sliding	45	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	1			Maximu	* SHGC*	SHGC sub tolerance	estitution ranges
						U-value	•	lower limit	upper limit
None									
Custom* roof	fwindows							SHGC sub	estitution
Window ID	Wind	ow Descriptior	1			Maximu	* SHGC*	tolerance	ranges
						0-value		lower limit	upper limit
None									
Roof win	dow scl	hedule							
Location	Win ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	INCE Skylight des	scription					
None			,						
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	er Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) (Opening %	Orier	itation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/I	PB	AFS 160mm	FCF/INS/PB		0.50	I	Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	it- Horiz shad proje	contal ing feature* ction (mm)	Vertical shading feature

2900

ESE

1804

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1014	NE	38	Yes
BED 2	AFS 160/INS/PB	2900	1181	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2801	NNE	3913	Yes
BED 2	AFS 160/INS/PB	2900	2801	SE	115	Yes
KLD	AFS 160/INS/PB	2900	4005	ESE	2535	Yes
KLD	AFS 160/INS/PB	2900	2481	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	72.2	0.00
INT-PB	Internal Plasterboard Stud Wall	52.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	2.50	Tile (8mm)
BED 1	CSOG-200: Concrete Slab on Ground (200mm)	14.7	N/A	0.00	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	47.6	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No
KLD	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Туро	Diameter (mm)	Sealed
		туре		/unsealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG09, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.5 Star Rating as of 10 Apr 2024



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım A	ssessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-EQ0032-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG10, 116-120 Frenchs Forest Rd
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	71.9	Suburban			
Unconditioned*	6.3	NatHERS climate zone			
Total	78.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	18.4	11.2			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com.</u> <u>au/pdf/HR-EQ0032-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG10, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG10, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

#HR-EQ0032-01 NatHERS Certificate

7.0 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approval stage		Construction stage		INTEL FORME STREET
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons surve	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor		·			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.0 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		balica kono, ufree
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	3.14
KLD	Kitchen/Living	38.26
BED 1	Bedroom	14.68
ENS 1	Night Time	5.13
BED 2	Bedroom	10.70
BATH	Unconditioned	6.34

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.40	2800	1600	Awning	60	ESE	None
BED 2	ATB-004-01 B	G.39	2900	2400	Sliding	45	SE	None
KLD	ATB-004-03 B	G.38	2900	4000	Sliding	45	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Descriptior	ı			Maximum		iC*	SHGC sub	stitution ranges
						U-value	• 		lower limit	upper limit
None										
Custom* roo	f windows								SHGC sub	stitution
Window ID	Wind	ow Descriptior	ı			Maximu U-value	* SHG	iC*	tolerance	ranges
None									lower limit	upper limit
Roof win	dow sch	hedule								
Location	Wine ID	dow	Window no.	Opening %	J Height (mm)	Width (mm)	Orie atior	nt- า	Outdoor shade	Indoor shade
None										
Skylight Skylight ID	type and	d performa	INCE Skylight de	scription						
None				-						
Skylight	aabadul	0								
Skylight	Skylight	C Skylight	Skylight shaft	Area	Orient-	Outdoor			Shaft	
Location	ID	No.	length (mm)	(m ²)	ation	shade	Diff	user	Reflec	ctance
None										
External	door sc	hedule								
Location			Height	(mm)	Width (m	m) (Opening	%	Orien	tation
None										
External	wall typ	е								
Wall ID		Wall Type			Solar absor	rptance	Wall Colour		Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	ΈB	AFS 160mm	FCF/INS/PB		0.50	l	Medium		3.00	No
External	wall sch	nedule								
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	nt- Ho sh pr	orizo adin ojec	ntal g feature* tion (mm)	Vertical shading feature

2900

ESE

1804

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	1258	NE		Yes
BED 2	AFS 160/INS/PB	2900	1200	NNE		Yes
BED 2	AFS 160/INS/PB	2900	2666	SE	2912	Yes
KLD	AFS 160/INS/PB	2900	4024	ESE	2485	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	85.6	0.00
INT-PB	Internal Plasterboard Stud Wall	57.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	2.50	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.4	N/A	2.50	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.3	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type Diameter (mm)		Sealed /unsealed	
BATH	1	Downlight	190	Sealed	

7.0 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

. . . .



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recom capacit	mended Y
No Whole of Home Data					

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-1WC56Z-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	AG11, 116-120 Frenchs Forest Rd , Frenchs Forest NSW 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	76.1	Suburban
Unconditioned*	6.2	NatHERS climate zone
Total	82.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.0	9.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-1WC56Z-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for AG11, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



6.6	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check	Approval stage		Construction stage		andre of another advance
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	er checked	ent authority/ /or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse surve)	Builde	Conse surve)	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					
6.6 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY	Day Time	4.21
KLD	Kitchen/Living	34.40
STUDY	Day Time	7.48
BED 1	Bedroom	14.46
ENS 1	Night Time	4.78
BATH	Unconditioned	6.16
BED 2	Bedroom	10.79

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
	•			lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper limit		
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-01 B	G.42	2900	2400	Sliding	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for AG11, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.43	2800	600	Awning	60	SSW	None
BED 2	ATB-003-01 B	G.46	2800	2400	Awning	45	SSW	None
ENS 1	ATB-004-01 B	G.44	970	900	Fixed	0	SSW	None
KLD	ATB-004-03 B	G.41	2900	3800	Sliding	45	ESE	None
STUDY	ATB-003-03 B	G.45	2800	1600	Awning	45	SSW	None

Roof window type and performance value

Default* r	oof windows
------------	-------------

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper lir	mit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	1816	Yes
BED 1	AFS 160/INS/PB	2900	3802	SSW		Yes
BED 1	AFS 160/INS/PB	2900	1529	NNE	3957	Yes
BED 2	AFS 160/INS/PB	2900	1975	WNW		Yes
BED 2	AFS 160/INS/PB	2900	3599	SSW		Yes
ENS 1	AFS 160/INS/PB	2900	2663	SSW		Yes
KLD	AFS 160/INS/PB	2900	4007	ESE	3345	Yes
STUDY	AFS 160/INS/PB	2900	2497	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	46.8	0.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	2.50	Tile (8mm)
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	2.50	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	2.50	Tile (8mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.3	N/A	0.15	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.5	N/A	2.50	Timber (12mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.1	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.3	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.3	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	260	Sealed
ENTRY	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed
Ceiling fans				
Location		Quantity	Diameter	(mm)



Ceiling fans

Location	Quantity	Diameter (mm)
STUDY	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fi	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	m 4	Assessed
Туре	Fuel type	Water CER Zone	efficien STC	cy/ c	laily load litres]
No Whole of Home Data					-
Pool / spa equipment		Minimum		_	
Туре	Fuel type	efficiency / performance)	Recommo capacity	ended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	n Capacity [kW	מ
No Whole of Home Data					

ATIONWIDE HOUSE

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-3XOGSH-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	ALG01, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	3 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type				
Conditioned*	158.6	Suburban				
Unconditioned*	4.6	NatHERS climate zone				
Total	163.1	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	1.9	7.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com.</u> <u>au/pdf/HR-3XOGSH-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for ALG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATION WIDE HERE STREET

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





9.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		sounded a number of the second
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	78.31
STUDY	Day Time	9.65
BATH	Unconditioned	4.56
BED 1	Bedroom	26.75
BED 2	Bedroom	19.77
BED 3	Bedroom	17.75
ENS 1	Night Time	6.32

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	·	U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC subs tolerance r	stitution anges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-04 B	LG.06	2900	3000	Sliding	45	NNE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for ALG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	LG.05	2800	1100	Fixed	0	NNE	None
BED 2	ATB-004-04 B	LG.08	2900	2400	Sliding	45	WNW	None
BED 3	ATB-004-04 B	LG.07	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-02 B	LG.01	2900	4000	Sliding	60	NNE	None
KLD	ATB-004-04 B	LG.02	2900	2400	Sliding	45	NNE	None
KLD	ATB-006-03 B	LG.03	1070	1450	Fixed	0	ESE	None
STUDY	ATB-003-01 B	LG.04	2800	1100	Awning	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	ndow ID Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



External door schedule

Location	Height (mm) Width	Width (mm)	Opening %	Orientation	

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4482	WNW		Yes
BED 1	AFS 160/INS/PB	2900	5969	NNE		Yes
BED 2	AFS 160/INS/PB	2900	4483	WNW		Yes
BED 3	AFS 160/INS/PB	2900	2973	WNW		Yes
KLD	AFS 160/INS/PB	2900	7328	NNE	2194	Yes
KLD	AFS 160/INS/PB	2900	3075	ESE		Yes
STUDY	AFS 160/INS/PB	2900	1295	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	67.8	0.00
INT-PB	Internal Plasterboard Stud Wall	99.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.8	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.8	N/A	2.50	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.7	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	78.3	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.7	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	12	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
				Minimum	Recommended
Туре	Location	I	Fuel Type	efficiency / performance	capacity
No Whole of Home Data					
Hot water system					
_		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	nended
Туре	Fuel type	efficiency / performanc	e	capacity	1
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k\	/]
No Whole of Home Data					
Battery schedul	e				

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-NINUAO-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	ALG02, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	3 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	135.5	Suburban			
Unconditioned*	4.6	NatHERS climate zone			
Total	140.1	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.6	3.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-NINUAO-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for ALG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:







8.6	Star	Rating	as	of	10	Apr	2024
-----	------	--------	----	----	----	-----	------



Certificate check		l stage	Construction stage			
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Conse surve	Occul	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

8.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	69.95
BED 1	Bedroom	25.16
BED 2	Bedroom	17.96
BED 3	Bedroom	17.64
ENS 2	Night Time	4.76
BATH	Unconditioned	4.62

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	shoc substitution tolerance ranges		
	· · · · · · · · · · · · · · · · · · ·	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	LG.12	2900	3000	Sliding	60	NNE	None
BED 1	ATB-004-04 B	LG.11	2800	1100	Fixed	0	NNE	None
BED 2	ATB-004-02 B	LG.13	1800	2400	Sliding	45	ESE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-02 B	LG.14	1800	2400	Sliding	45	ESE	None
KLD	ATB-003-01 B	LG.10	2800	1100	Awning	60	NNE	None
KLD	ATB-004-02 B	LG.09	2900	4200	Sliding	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID Window Description None Custom* roof windows Window ID Window Description	Window Description	Maximum SHG	SHGC substitution C* tolerance ranges
	U-value*	lower limit upper limit	
None			
Custom* roof w	indows		
Window ID	Window Description	Maximum SHG	SHGC substitution C* tolerance ranges
	·	U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									
External	door sci	hedule							
Location			Height	(mm)	Width (r	mm) O	pening %	Orientation	
None									

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	obserntense	Colour	insulation	wall
		absorptance	Colour	(R-value)	wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	5965	NNE	2243	Yes
BED 1	AFS 160/INS/PB	2900	4226	ESE		Yes
BED 2	AFS 160/INS/PB	2900	3871	ESE		Yes
BED 3	AFS 160/INS/PB	2900	3814	ESE		Yes
KLD	AFS 160/INS/PB	2900	1397	NNE		Yes
KLD	AFS 160/INS/PB	2900	2958	WNW		Yes
KLD	AFS 160/INS/PB	2900	4877	NNE	2263	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	29.0	0.00
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	32.4	3.00
INT-PB	Internal Plasterboard Stud Wall	84.6	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.2	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.0	N/A	2.50	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.6	N/A	2.50	Timber (12mm)
ENS 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	70.0	N/A	2.50	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 3	1	Downlight	190	Sealed
ENS 2	1	Exhaust Fan	350	Sealed
KLD	4	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system				_	
		Hot	Minimu	im A	ssessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
· · · · · · · · · · · · · · · · · · ·			

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-VS7NDL-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type				
Conditioned*	53.4	Suburban				
Unconditioned*	3.9	NatHERS climate zone				
Total	57.3	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.8	6.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-VS7NDL-01.

When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-VS7NDL-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage Stag		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ eyor checked	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check			·		
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.61
BED 3	Bedroom	12.82
BATH	Unconditioned	3.90

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*			upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-01 B	1.04	2900	3000	Sliding	45	WNW	None
KLD	ATB-004-01 B	1.03	2900	1900	Sliding	45	NNE	None
KLD	ATB-004-01 B	1.02	2800	3660	Fixed	0	NW	None

Roof window type and performance value

Default* roof windows Maximum SHGC substitution tolerance ranges Window ID Window Description SHGC* Invertimit upper limit None None None None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOULSE

Custom* roof windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC subs	stitution anges
	······································	U-value*		lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 3	AFS 160/INS/PB	2900	3997	WNW	2273	Yes
BED 3	AFS 160/INS/PB	2900	3437	NNE		Yes
KLD	AFS 160/INS/PB	2900	2295	NNE	3788	Yes
KLD	AFS 160/INS/PB	2900	3981	NW		Yes
KLD	AFS 160/INS/PB	2900	1621	SW		Yes
KLD	AFS 160/INS/PB	2900	788	WNW		Yes



Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	56.5	0.00
INT-PB	Internal Plasterboard Stud Wall	19.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Tile (8mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.7	N/A	0.00	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 3	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction Added Solar insulation absorptant (R-value)	Roof Colour
--	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
Туре		Fuel type	Hot Water CER Zone	Minim efficie STC	ium A ncy / d [l	ssessed aily load itres]
No Whole of Home Data						
Pool / spa equipment			Minimur	n	Pacammo	unded

Recommended Туре Fuel type efficiency / capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data


Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-UB5CRF-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	87.5	Suburban
Unconditioned*	3.2	NatHERS climate zone
Total	90.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	32.1	4.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-UB5CRF-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MILONWICH HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

0.1 Star Rating as 01 10 Apr 2024	6.1	Star	Rating	as	of	10	Apr	2024
--	-----	------	--------	----	----	----	-----	------



Certificate check	Approval stage Construction stage		indica france annual		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asset	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Approval stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	47.62
BED 1	Bedroom	11.98
ENS 1	Night Time	5.12
BED 2	Bedroom	10.02
STUDY	Day Time	8.12
BATH	Day Time	4.60
LDRY	Unconditioned	3.22

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.10	2800	2400	Awning	29	SSW	None
BED 2	ATB-003-01 B	1.09	2800	600	Awning	58	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-01 B	1.08	2900	2400	Sliding	45	WNW	None
KLD	ATB-004-03 B	1.06	2900	2150	Sliding	45	SSW	None
KLD	ATB-004-03 B	1.05	2800	3660	Fixed	0	NW	None
STUDY	ATB-004-03 B	1.07	2900	2400	Sliding	45	WNW	None

Roof window type and performance value

Default* roof	windows								
Window ID	Winde	ow Descriptio	n			Maximun	¹ SHGC*	SHGC sub tolerance	stitution ranges
						U-value*		lower limit	upper limit
None									
Custom* roo	of windows								
						Maximun	•	SHGC sub	stitution
Window ID	Windo	ow Descriptio	on			U-value*	SHGC*	lower limit	upper limit
None									
Roof win	idow sch	nedule							
Location	Wind ID	dow	Window no.	Openin %	ig Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l perform	ance						
Skylight ID	51	,	Skylight de	scription					
None									
Skylight	schedule	9							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflee	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	im) O	pening %	Orien	tation
None									



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4200	SSW		Yes
BED 2	AFS 160/INS/PB	2900	3565	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW	2502	Yes
KLD	AFS 160/INS/PB	2900	2786	SSW	5418	Yes
KLD	AFS 160/INS/PB	2900	3783	NW		Yes
KLD	AFS 160/INS/PB	2900	1417	SW		Yes
STUDY	AFS 160/INS/PB	2900	2701	WNW	2511	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	65.6	0.00
INT-PB	Internal Plasterboard Stud Wall	72.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	44.8	N/A	0.00	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	2.50	Timber (12mm)
LDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LDRY	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building alamont	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
(height x width, mm)	(height x width, mm)	(mm)	(BMT mm)	(R-value)



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
				Minimum	Recommended
Туре	Location	I	Fuel Type	efficiency / performance	capacity
No Whole of Home Data					
Hot water system					
_		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	nended
Туре	Fuel type	efficiency / performanc	e	capacity	1
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k\	/]
No Whole of Home Data					
Battery schedul	e				

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-V2Y5QG-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	68.0	Suburban
Unconditioned*	4.4	NatHERS climate zone
Total	72.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling	
Modelled	19.0	5.4	
Load limits	34	21	

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-V2Y5QG-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



7.6 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Sta		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check			·			
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?						
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ns to the N	isfied CC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.43
BED 1	Bedroom	11.03
ENS 1	Night Time	4.46
BED 2	Bedroom	11.10
BATH	Unconditioned	4.38

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID Window	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	1.13	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	1.14	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	1.15	1900	2400	Awning	45	ESE	None
KLD	ATB-003-01 B	1.11	2800	4800	Awning	39	ESE	None
KLD	ATB-004-01 B	1.12	2900	2750	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Description	1			Maximu	^{JM} SHGC*	SHGC substitution C* tolerance ranges	
		p	-			U-value)*	lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	Wind	ow Description				Maximu	IM SHGC*	SHGC sub tolerance	stitution ranges
	Willa	ow Description				U-value)*	lower limit	upper limit
None									
Roof wii	ndow scl	nedule							
Location	Wind ID	dow	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	l performa	ince						
Skylight ID			Skylight de	scription					
None									
Skylight	schedule	Э							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Refle	ctance
None				. ,					
External	l door sc	hedule							
Location			Height	(mm)	Width (m	m)	Opening %	Orier	ntation
None									
External	l wall typ	е							
Wall ID		Wall Type			Solar abso	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	l wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orier ation	nt- shadi proje	ontal ng feature* ction (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	РВ	2900	2972	ESE	3073		Yes

* Refer to glossary.



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3711	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2990	ESE	315	Yes
KLD	AFS 160/INS/PB	2900	5791	ESE	315	Yes
KLD	AFS 160/INS/PB	2900	3088	SSW	3867	Yes
KLD	AFS 160/INS/PB	2900	750	ESE	3073	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cool	ling	system	
------	------	--------	--

Туре	Location		Fuel Type	efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um /	Assessed
Туре	Fuel type	Water	efficie	ncy/ d	daily load
-		CER Zone	STC	-	litres]

. . . .

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		N <i>A</i> :		
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		
No whole of home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-WOL588-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	68.5	Suburban			
Unconditioned*	4.2	NatHERS climate zone			
Total	72.7	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.2	11.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-WOL588-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



7.2 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approva	l stage	Construc stage	tion	INSECTION CONTRACTOR
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	isent authority/ /eyor checked	der checked	isent authority/ /eyor checked	upancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Buil	Cor sur	000
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		'	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.2 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. At include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied CC

energy efficiency requirements.

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.21
BED 1	Bedroom	13.02
ENS 1	Night Time	4.51
BED 2	Bedroom	10.71
BATH	Unconditioned	4.20

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC subs tolerance r	stitution anges
		U-value*	0.100	lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	1.20	2900	2400	Sliding	45	ESE	None
BED 2	ATB-003-02 B	1.19	1900	2400	Awning	45	ESE	None
KLD	ATB-003-01 B	1.16	2800	2650	Awning	29	ESE	None
KLD	ATB-003-01 B	1.17	2800	2650	Awning	29	ESE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-02 B	1.18	2900	2400	Sliding	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHC	SHGC substitution GC* tolerance ranges
	·······	U-value* lower limi	lower limit upper limit
None			
Custom* roof v	vindows		

Window ID Window Description Maximum U-value* SHGC* SHGC substitution tolerance ranges None None SHGC* SHGC*</td

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3881	ESE	2819	Yes
BED 2	AFS 160/INS/PB	2900	2977	ESE		Yes
KLD	AFS 160/INS/PB	2900	5820	ESE	315	Yes
KLD	AFS 160/INS/PB	2900	2811	NNE	3727	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	64.5	0.00
INT-PB	Internal Plasterboard Stud Wall	41.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.7	N/A	0.00	Timber (12mm)
ENS 1	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.1	N/A	0.00	Tile (8mm)
ENS 1	CSOG-200: Concrete Slab on Ground (200mm)	1.1	N/A	0.00	Tile (8mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	Im (hasasad

		Hot	Minimum	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-DUOCH1-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	79.2	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	83.0	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	20.5	4.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-DUOCH1-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construct stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	ment is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.12
KLD	Kitchen/Living	36.90
STUDY	Day Time	4.20
BED 1	Bedroom	13.16
ENS 1	Night Time	3.75
BATH	Unconditioned	3.78
BED 2	Bedroom	13.05

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.25	1900	2400	Awning	45	ESE	None
BED 2	ATB-003-01 B	1.24	1900	2400	Awning	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B105, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086


Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-02 B	1.21	2900	6000	Sliding	60	NNE	None
KLD	ATB-003-02 B	1.22	2800	3300	Awning	39	ESE	None
KLD	ATB-003-01 B	1.23	2800	1100	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
	·····	U-value*	lower limit upper limit
None			
Custom* roof wi	ndows		
Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									
External	door sci	hedule							
Location			Height	(mm)	Width (r	nm) O	pening %	Orientation	
None									

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	obserntense	Colour	insulation	wall
		absorptance	Colour	(R-value)	wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	343	Yes
BED 1	AFS 160/INS/PB	2900	2783	SSW	3835	Yes
BED 2	AFS 160/INS/PB	2900	3006	ESE	343	Yes
KLD	AFS 160/INS/PB	2900	6800	NNE	2729	Yes
KLD	AFS 160/INS/PB	2900	6495	ESE	343	Yes
KLD	AFS 160/INS/PB	2900	4133	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	34.8	0.00
INT-PB	Internal Plasterboard Stud Wall	78.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2700

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimi efficiei STC	um A ncy/d	Assessed laily load litres]
No Whole of Home Data	3				-
Pool / spa equipment	:	Minimum			
Туре	Fuel type	efficiency / performance		Recommo capacity	ended
No Whole of Home Data	3				
Onsite Renewa	able Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	ני
No Whole of Home Data	3				
Pattony schod	ulo				

Battery schedule

Type

Storage Capacity [kWh]

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-YQO5PO-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	86.7	Suburban
Unconditioned*	4.6	NatHERS climate zone
Total	91.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.1	13.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-YQO5PO-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MIRONWIEH HOLEN

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.8 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	India (Linka duni	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Con	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.8 Star Rating as of 10 Apr 2024



Certificate check	rtificate check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.43
HALL	Day Time	7.18
BED 1	Bedroom	13.00
ENS 1	Night Time	4.11
BED 2	Bedroom	14.11
BATH	Unconditioned	4.61
STUDY	Day Time	7.88

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62	
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID Window Descri	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ALM-004-01 A	1.34	970	850	Double Hung	45	SSW	None
BED 1	ATB-003-01 B	1.31	2800	600	Awning	58	WNW	None
BED 1	ALM-004-03 A	1.30	2900	1200	Casement	90	NNE	None
BED 2	ATB-004-01 B	1.33	2800	2750	Sliding	29	NW	None
ENS 1	ATB-004-01 B	1.32	970	1200	Fixed	0	WNW	None
KLD	ATB-004-02 B	1.26	2900	4950	Sliding	45	NNE	None
KLD	ATB-004-01 B	1.27	2900	1130	Fixed	0	NNW	None
STUDY	ATB-004-04 B	1.29	2900	2475	Sliding	45	WNW	None
STUDY	ATB-004-04 B	1.28	2700	2590	Fixed	0	NNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					
Custom* roof	windows		SHGC substitution		

Window ID	Window Description	Maximum SHGC*	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	
Skylight schedule	

Location	Skylight	Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffusor	Shaft
	ID	No.	length (mm)	(m²)	ation	shade	Dillusei	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B106, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS 160/INS/PB	2900	1622	SSW		Yes
BED 1	AFS 160/INS/PB	2900	3404	WNW	183	Yes
BED 1	AFS 160/INS/PB	2900	1472	NNE	2345	Yes
BED 2	AFS 160/INS/PB	2900	2828	NW		Yes
BED 2	AFS 160/INS/PB	2900	3933	SSW		Yes
BED 2	AFS 160/INS/PB	2900	990	SW		Yes
ENS 1	AFS 160/INS/PB	2900	1632	WNW	183	Yes
KLD	AFS 160/INS/PB	2900	5619	NNE		Yes
KLD	AFS 160/INS/PB	2900	1243	NNW		Yes
STUDY	AFS 160/INS/PB	2900	2837	WNW	802	Yes
STUDY	AFS 160/INS/PB	2900	2675	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	52.8	0.00
INT-PB	Internal Plasterboard Stud Wall	62.2	0.00



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.5	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.3	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2400
STUDY	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		Hot	Minim	um /	Assosod
Туре	Fuel type	Water CER Zone	efficie STC	ncy / c	laily load litres]
No Whole of Home Data					-
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performan	/ ice	Recommo capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Orientatation

Generation Capacity [kW]

Orientatation



Onsite Renewable Energy *schedule*

Type No Whole of Home Data Generation Capacity [kW]

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-3TZQ3Z-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024		
Prepared by	Brewster Murray		

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned* 53.5		Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	57.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.7	7.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-3TZQ3Z-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-3TZQ3Z-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check		Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Conse surve	Builde	Consi surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Sudest Borrow, strawe
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.67
BED	Bedroom	12.82
BATH	Unconditioned	3.90

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57

Custom* windows

Window ID W	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED	ATB-004-01 B	2.04	2900	3000	Sliding	45	WNW	None
KLD	ATB-004-01 B	2.03	2900	1900	Sliding	45	NNE	None
KLD	ATB-004-01 B	2.02	2800	3660	Fixed	0	NW	None

Roof window type and performance value

Default* roof windows Maximum SHGC substitution tolerance ranges Window ID Window Description SHGC substitution tolerance ranges Iower limit upper limit Iower limit upper limit

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOLONOUSEE

Custom* roof windows

Window ID	low ID Window Description Ma	Maximum	SHGC*	SHGC sub	stitution ranges
		U-value*		lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED	AFS 160/INS/PB	2900	3997	WNW	2273	Yes
BED	AFS 160/INS/PB	2900	3437	NNE		Yes
KLD	AFS 160/INS/PB	2900	2295	NNE	4127	Yes
KLD	AFS 160/INS/PB	2900	3969	NW		Yes
KLD	AFS 160/INS/PB	2900	1621	SW		Yes
KLD	AFS 160/INS/PB	2900	788	WNW		Yes



Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	56.5	0.00
INT-PB	Internal Plasterboard Stud Wall	19.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Tile (8mm)
BED	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	ium A	ssessed
		Fuel type	Water	efficie	encv/ d	ailv load
.,,,			CER Zone	STC	[]	itres]
No Whole of Home Data						
Pool / spa equipment						
			Minimur	n	-	

Recommended Туре Fuel type efficiency / capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore (horizontal plane, e.g. exves. varandishs, genegals, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a hore that achieves an at taze orenergy value? Op	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the will colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can b found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.abters.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not hava a diff	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Stading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-52UM6I-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
	1 0 0/010000 04/05710
LOUDP	1-2-3/213008-24/25/13
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	87.5	Suburban		
Unconditioned*	3.2	NatHERS climate zone		
Total	90.7	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	30.5	6.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-52UM6I-01.

When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-52UM6I-01 NatHERS Certificate

6.2 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approva	l stage	Construc stage	tion	COME? ACTIVE STREET
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type table' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage St		Construction stage		Debili r kolovi, spisor
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	47.62
BED 1	Bedroom	11.98
ENS 1	Night Time	5.12
BED 2	Bedroom	10.02
STUDY	Day Time	8.12
BATH	Day Time	4.60
LDRY	Unconditioned	3.22

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	M * SHGC* SHGC* iolerance ra lower limit	SHGC substitution tolerance ranges	
		U-value*		upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.10	2800	2400	Awning	29	SSW	None
BED 2	ATB-003-01 B	2.09	2800	600	Awning	58	SSW	None
BED 2	ATB-004-03 B	2.08	2900	2400	Sliding	45	WNW	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-03 B	2.06	2900	2150	Sliding	45	SSW	None
KLD	ATB-004-03 B	2.05	2800	3660	Fixed	0	NW	None
STUDY	ATB-004-03 B	2.07	2900	2400	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC substitution tolerance ranges		
	·····	U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								
Externa	l door sc	hedule						
Location			Height	(mm)	Width (I	mm) O	pening %	Orientation
None								

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
		absorptance	Colour	(R-value)	wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4200	SSW		Yes
BED 2	AFS 160/INS/PB	2900	3565	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW	2502	Yes
KLD	AFS 160/INS/PB	2900	2786	SSW		Yes
KLD	AFS 160/INS/PB	2900	321	WNW		Yes
KLD	AFS 160/INS/PB	2900	297	NNE		Yes
KLD	AFS 160/INS/PB	2900	3783	NW		Yes
KLD	AFS 160/INS/PB	2900	1417	SW		Yes
STUDY	AFS 160/INS/PB	2900	2701	WNW	2511	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	63.8	0.00
INT-PB	Internal Plasterboard Stud Wall	72.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	47.6	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
LDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.15	Tile (8mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LDRY	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed
Ceiling fans				

Location Quantity Diameter (mm) None Vone Vone Vone

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		Hot	Minim	um	Assasad
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performan	ce	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-VAAG7G-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	68.0	Suburban
Unconditioned*	4.4	NatHERS climate zone
Total	72.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.3	9.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-VAAG7G-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
NATIONWIDE HOUSE HEADY LAINE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage	tion	INNER AND COURSE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Consurv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Co		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.43
BED 1	Bedroom	11.03
ENS 1	Night Time	4.46
BED 2	Bedroom	11.10
BATH	Unconditioned	4.38

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	U-valu	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	2.13	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	2.14	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	2.15	1900	2400	Awning	45	ESE	None
KLD	ATB-003-01 B	2.12	2800	4800	Awning	39	ESE	None
KLD	ATB-004-01 B	2.11	2900	2750	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

Window ID	Wind	ow Descriptior	1			Maximu	, ^m SHGC*	SHGC sub tolerance	ostitution ranges
						0-value		lower limit	upper limit
None									
Custom* roo	of windows								
Minday ID			_			Maximu	m oucot	SHGC sub tolerance	stitution ranges
window ID	vvina	ow Description	1			U-value*	, SHGC*	lower limit	upper limit
None									
Roof wir	ndow scl	hedule							
Location	Win ID	dow	Window no.	Opening %) Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type and	d performa	ince						
Skylight ID			Skylight de	scription					
None									
Skylight	schedul	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Reflee	ctance
None									
External	l door sc	hedule							
Location			Height	(mm)	Width (m	m) C	Opening %	Orien	itation
None									
External	l wall typ	e							
Wall ID		Wall Type			Solar abso	rptance (Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS	S/PB	AFS 160mm	FCF/INS/PB		0.50	Ν	Medium	3.00	No
External	l wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ^a	t- shadii projec	ontal ng feature* ction (mm)	Vertical shading feature
BED 1		AFS 160/INS/F	РВ	2900	2972	ESE	3073		Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3711	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2990	ESE	234	Yes
KLD	AFS 160/INS/PB	2900	5791	ESE	234	Yes
KLD	AFS 160/INS/PB	2900	3088	SSW	3867	Yes
KLD	AFS 160/INS/PB	2900	750	ESE	3073	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cool	ling	system
------	------	--------

Туре	Location		Fuel Type	efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um /	Assessed
Туре	Fuel type	Water	efficie	ncy/ d	daily load
-		CER Zone	STC	-	litres]

. . . .

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-MMLQK2-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type				
Conditioned* 68.5		Suburban				
Unconditioned*	4.2	NatHERS climate zone				
Total	72.7	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.3	11.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-MMLQK2-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOLENOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.1 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	isent authority/ /eyor checked	der checked	isent authority/ /eyor checked	upancy/other	
It is not mandatory to complete this checklist.	Ass	Con	Buil	Con surv	000	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type table' on this Certificate?						
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?						
Floor				·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Index Autory Science
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.21
BED 1	Bedroom	13.02
ENS 1	Night Time	4.51
BED 2	Bedroom	10.71
BATH	Unconditioned	4.20

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	2.20	2900	2400	Sliding	45	ESE	None
BED 2	ATB-003-02 B	2.19	1900	2400	Awning	45	ESE	None
KLD	ATB-003-01 B	2.16	2800	2650	Awning	29	ESE	None
KLD	ATB-003-01 B	2.17	2800	2650	Awning	29	ESE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-02 B	2.18	2900	2400	Sliding	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof wi	ndows					

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3881	ESE	2819	Yes
BED 2	AFS 160/INS/PB	2900	2977	ESE		Yes
KLD	AFS 160/INS/PB	2900	5820	ESE	234	Yes
KLD	AFS 160/INS/PB	2900	2811	NNE	3727	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	64.5	0.00
INT-PB	Internal Plasterboard Stud Wall	41.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ncy /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		N4 : :		
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-CGDFC6-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B205, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	79.2	Suburban		
Unconditioned*	3.8	NatHERS climate zone		
Total	83.0	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	20.5	8.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-CGDFC6-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B205, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.



	7.1	Star	Rating	as of	10	Apr	2024
--	-----	------	--------	-------	----	-----	------



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builde	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.12
KLD	Kitchen/Living	36.90
STUDY	Day Time	4.20
BED 1	Bedroom	13.16
ENS 1	Night Time	3.75
BATH	Unconditioned	3.78
BED 2	Bedroom	13.05

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description Maximum U-value*	Maximum U-value*	Maximum	Maximum	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit			
None								

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.25	1900	2400	Awning	45	ESE	None
BED 2	ATB-003-01 B	2.24	1900	2400	Awning	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B205, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-02 B	2.21	2900	6000	Sliding	60	NNE	None
KLD	ATB-003-02 B	2.22	2800	3300	Awning	39	ESE	None
KLD	ATB-003-01 B	2.23	2800	1100	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						
Custom* roof wir	ndows					
Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								
Externa	l door sc	hedule						
Location			Height	(mm)	Width (I	mm) O	pening %	Orientation
None								

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	obserntense	Colour	insulation	wall
		absorptance	Colour	(R-value)	wrap*

* Refer to glossary.



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	262	Yes
BED 1	AFS 160/INS/PB	2900	2783	SSW	3835	Yes
BED 2	AFS 160/INS/PB	2900	3006	ESE	262	Yes
KLD	AFS 160/INS/PB	2900	6800	NNE	2729	Yes
KLD	AFS 160/INS/PB	2900	6495	ESE	262	Yes
KLD	AFS 160/INS/PB	2900	4133	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	34.8	0.00
INT-PB	Internal Plasterboard Stud Wall	78.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficien STC	im icy /	Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment		Minimum		_	
Туре	Fuel type	efficiency / performanc	e	Recomm capacity	nended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [k\	v]
No Whole of Home Data					
Pottony ashadul					

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freestation Rating Council Assessed from a the floor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents. Calling penetrations features that require a penetration to the celling, including downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the celling with small holes through the celling forwing, a celling fams, predart lights, and penetration of the colling downights, wents, enhaut fam, range hood, stimmys and fues. Excludes futures attached to the calling and oxiling based on standard occupancy assumptions. In some oricumstances it will include garages. COP Coefficient of performance Coustom windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows list on AMERERS oftware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. ERR Energy reliancy "Effecting Pathet Base software and must no be modeling user, the environment and energy networks (as defined in the ABCB Housing Powisons Similaria). Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated control in a Case 2 building. Exposure category - sogneed rating xithou all software and must no be modeling as a door when opening to a minmally ventilated software and must no the endocinco base NCC Class 1.2 or 4 buildings of market in Australia anass.	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purposed file NMHERS assessment. Note, this may not be considert with the floor area in the design documents. Colling pertrations features that regime a pertention to the celling, rubridg down flox, and the software attached to the celling with small holes through the celling for winn, a q, celling that sexpected to require heating and cooling ducts. Conditioned a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed a row within a divergenting that is expected to require heating and cooling ducts. Cordinationed windows that are required thy divergentiation of the software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default windows windows that are required to software that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Energy use The is yout nomes rating without solar or batteries. Energy use The expect vision of the software that are available as a door when opening to a minimally ventilated contorin a Cass 2 building. Exposure category - sophet termin with monoxitorins at a first grazing land, cocan-frontage, desert, drayoed high-rise unit (sually above 10 fors). Exposure category - souburbate <thtermin a="" at="" cocan<="" first="" grazing="" land,="" monoxitorins="" th="" with=""><th>AFRC</th><th>Australian Fenestration Rating Council</th></thtermin>	AFRC	Australian Fenestration Rating Council
Calling penetrations features that require a penetration to the ceiling, including downlights, events iters, and heading and cooling docks. Conditioned a zone within a dwelling that is expected to require heading and sociing docks. COP Coefficient of performance Costom windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Data windows windows listed in AnNERES software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Default windows windows listed in ANNERS software that are available on the market in Australia and have a WERS (Window Energy Raing Scherne) rating. Deray use This is your homes rating window sider of that are market and any and cooling loss on a single WM of decaricly input Energy use The is your homes rating window sider of that and any and cooling loss and any and loss and loss and any and cooling loss and any and cooling loss and any any and cooling loss and any and loss and any any and loss and any	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwalling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Custom windows windows listed in a representable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representable of a specific type of window product and whose properties have been derived by statistical methods. Energy usa This is your homes rating without sold or to stations. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed there signify wentilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dobtructions e.g. flag rating land, cocean-fontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - supported terrain with numerous, closely spaced obstructions below 10m e.g. gasalination and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are a grassing as a classification and the medicinal ansot. Exposure category - supported terrain with numerous, closely spaced obstructions are in e.g. qavend Anbitiga in the tori	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories point Exposure category - sepsed terrain with no obstructions e.g. fag training land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with no obstructions e.g. ad grazing land, cost- frontage, desirt, exposed high-rise unit (usually above 10 foors). Exposure category - sope terrain with numerous, closely spaced obstructions solve 10m e.g., suburban housing, heavily vegetated bushal index, elevated bushal index, elevated bushal index, elevated bushal index, elevated bushal index (ag abova 8 foor on at with or destructions code (ag abova 8 foor on at with or destructions code (ag abova 8 foor on windows that is used in ventilation calculatons. Provides hading the building in the horizontal pane, e.g. every strandark, perceptils, carports, or ovehangs or balanies from upper levels. National Const	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and windows properties have been dirend by statistical methods. ERE Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or batteries. Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions) Entrance door these signify ventilation benefits in the modalling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, cean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with murrous, lockey spaced obstructions below TOm, farmiand with scattered sheds, lightly vegetated built to expect and using heavity vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet), below space obstructions below TOm, farmiand with scattered sheds, lightly vegetated builts (as internet)	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an in conditioner for a single KWh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ARCB Housing Provisions Standard). Entrance door These signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terms with no estructions e.g. flat grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed termin with no estructions at a similar height a grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush to a single state of the horizontal plane, a grassland swith few well scattered structions below 10m, farmland with scattered sheds, lightly vegetated bush to a grassland swith numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Exposure category - protected termin with numerous, doesely spaced dostructions over 10 m e.g. coly and industial areas. Provisional feature provides shadings. Definitions can be found at who was periodies. Scattered sheds, lightly vegetated bush and areas. Recording features the opronabily provision value a dassigns a	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy (Efficiency Reb, messure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy use This is your homes rafing without sour or bateries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - oppon terrain with no obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with new obstructions e.g. fill grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - soburban terrain with numerous, closely spaced dostructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variadhs, pregolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by therifunction and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or doprability percentage or doprability percentage or dopratis reprovisional value or inithe NMT MERS to ability ventilation	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these segunty ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., file grazing land, cocan-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - exposed terrain with numerous, dosely spaced dostructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - suburban terrain with numerous, dosely spaced dostructons e.g. enevs, erroradabs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the KCG groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abods gov au. Net zero home a horme that achieves a net zero energy value ² . Opening percentage the capability percentage or operable (movisable) area of doors or windows that is used in ventilation, calculators. Provisional value an assumed value. For example, if the vall colour is unspecified in the documentation, a provisional value of medumin' must value for esapplied to valis, nords and	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/inducting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Mational Construction Code terrain with a cubicity in function and use, and assigns a catesfication code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the copenability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value flat does not represent an actual value. For example, if the wall colour	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no dostructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the houzintal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by thru function and use and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openeithy percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value find the find selection sizing should be confirmed by a sulbally qualified person. Reflective wrag (also known as foil) can able capacity or size of equipment that is recommended by NatHERS to achieve the desired confictor conficons in the zone or zones serviced.	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-forstage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. National Construction Code Class 10a buildings. Definitions can be found at www. abcb.gov.au. Net zero home a home that achieves a net zero energy value ^a . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a assumed value that does not represent an actual value. For example, if the value and auto achieve the desired confort conditions in the zone or zones serviced. This is a recommended to a value for medium. Recommended capacity this is the capacity or size of equipment that is recommended by VaHERS to achieve the desired confort conditions in the zone or zones serviced. This is a recommended to walls, roofs and cellings. When comtimed with an appropri	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions a la similar holgs (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cly and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (KCC) Class the NCC groups buildings. Behnitons can be found at www.abcl.gov.au. Net zero home a home that achieves a net zero energy value*. Provisional value an assume value wait. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NaHFERS Technical Note and can be found at www.abtersg.ov.au Reflective wrap (also known as foil) an assume thing a selection sizing should be confirmed by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommended capacity this is the capacity or size of equipment that is recommended by NaHFERS to achive the desired comfort conditions in the zone or zones serviced. This is a recommende to model wails, roofs and cellings. When comb	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. cuburban housing, heavily vegetated bushland areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, peroglas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings. Definitions can be found at www.abcb.gov.au. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www nathers gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selectono sing shoulb be couldined person. <t< th=""><th>Exposure category - exposed</th><th>terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).</th></t<>	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. </th <th>Exposure category - open</th> <th>terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).</th>	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. (1) van industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the MattERS Technical Note and can be found at www.nathers.gov.au Reference this is the capacity or size of equipment that is recommended by NatHERS technical Note and can be found at work nathers.gov.au Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opend), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of include noigh a window, both directly transmitte asuel a subsorbed and subsequently released inward. SHG	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, solt directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights. for NatH	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAtHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the CEr engrys RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a numbe between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mt thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the builting ability.Unconditioneda zone within a dwelling that is assumed to	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the CC an Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides s	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, veget	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). window shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-N5IE98-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B206, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	86.7	Suburban
Unconditioned*	4.6	NatHERS climate zone
Total	91.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.4	17.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-N5IE98-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B206, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-N5IE98-01 NatHERS Certificate

7.3 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		-			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.3 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	index done. Under
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging							
Does the dwelling meet the NCC requirement for thermal bridging?							
Insulation installation method							
Has the insulation been installed according to the NCC requirements?							
Building sealing							
Does the dwelling meet the NCC requirements for Building Sealing?							
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)			
Appliances							
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?							
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?							
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?							
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?							
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?							
Additional NCC Requirements for Services (not included in the NatHERS assessment)							
Does the lighting meet the artificial lighting requirements specified in the NCC?							
Does the hot water system meet the additional requirements specified in the NCC?							
Provisional values* check							
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?							
Other NCC requirements							
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat	isfied ICC		

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.40
HALL	Day Time	7.18
BED 1	Bedroom	13.00
ENS 1	Night Time	4.11
BED 2	Bedroom	14.11
BATH	Unconditioned	4.61
STUDY	Day Time	7.90

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	•	U-value*		lower limit	upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ВАТН	ALM-004-01 A	2.34	970	850	Double Hung	45	SSW	None
BED 1	ATB-003-01 B	2.31	2800	600	Awning	58	WNW	None
BED 1	ALM-004-03 A	2.30	2900	1200	Casement	90	NNE	None
BED 2	ATB-004-01 B	2.33	2800	2750	Sliding	29	NW	None
ENS 1	ATB-004-01 B	2.32	970	1200	Fixed	0	WNW	None
KLD	ATB-004-02 B	2.26	2900	4950	Sliding	45	NNE	None
KLD	ATB-004-01 B	2.27	2900	1130	Fixed	0	NNW	None
STUDY	ATB-004-04 B	2.29	2900	2475	Sliding	45	WNW	None
STUDY	ATB-004-04 B	2.28	2700	2590	Fixed	0	NNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			
Custom* roof wi	indows		

Window ID	Window Description	Maximum SHGC*	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	
Skylight schedule	

Location	Skylight	Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffusor	Shaft
	ID	No.	length (mm)	(m²)	ation	shade	Diffuser	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B206, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

SHCC substitution



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS 160/INS/PB	2900	1622	SSW		Yes
BED 1	AFS 160/INS/PB	2900	3404	WNW	257	Yes
BED 1	AFS 160/INS/PB	2900	1472	NNE	2344	Yes
BED 2	AFS 160/INS/PB	2900	2828	NW		Yes
BED 2	AFS 160/INS/PB	2900	3933	SSW		Yes
BED 2	AFS 160/INS/PB	2900	990	SW		Yes
ENS 1	AFS 160/INS/PB	2900	1632	WNW	257	Yes
KLD	AFS 160/INS/PB	2900	5619	NNE		Yes
KLD	AFS 160/INS/PB	2900	1233	NNW		Yes
STUDY	AFS 160/INS/PB	2900	2838	WNW	1731	Yes
STUDY	AFS 160/INS/PB	2900	2660	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	52.8	0.00
INT-PB	Internal Plasterboard Stud Wall	62.1	0.00


Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.4	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Nono			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed
Ceiling fans				

ooming rand			
Location	Quantity	Diameter (mm)	



Ceiling fans

Location G	Quantity	Diameter (mm)
KLD 1	1	1500
STUDY 1	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		Hot	Minim	um	Assassad
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performar	/ 1Ce	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedul	le			

Type Orientatation

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B206, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

Generation Capacity [kW]



Onsite Renewable Energy *schedule*

 Type
 Orientatation
 Generation Capacity [kW]

 No Whole of Home Data

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-G43FIU-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	53.5	Open
Unconditioned*	3.9	NatHERS climate zone
Total	57.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	22.1	6.8		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-G43FIU-01</u>. When using either link,

http://www.hero-software.



NATIONWIDE HOUSE EURO

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-G43FIU-01 NatHERS Certificate

7.1 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approval stage		Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ eyor checked	er checked	sent authority/ syor checked	ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*			1		
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.1 Star Rating as of 10 Apr 2024



Certificate check	k Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method		·	·	·	·
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is n	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.68
BED	Bedroom	12.82
BATH	Unconditioned	3.90

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED	ATB-004-01 B	3.04	2900	3000	Sliding	45	WNW	None
KLD	ATB-004-01 B	3.03	2900	1900	Sliding	45	NNE	None
KLD	ATB-004-01 B	3.02	2800	3660	Fixed	0	NW	None

Roof window type and performance value

Default* roof windows					
Window ID	low ID Window Description Maximum U-value*	SHGC*	tolerance ranges		
		U-value*		lower limit	upper limit
None					

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED	AFS 160/INS/PB	2900	3997	WNW	2273	Yes
BED	AFS 160/INS/PB	2900	3437	NNE		Yes
KLD	AFS 160/INS/PB	2900	2295	NNE	4084	Yes
KLD	AFS 160/INS/PB	2900	3979	NW		Yes
KLD	AFS 160/INS/PB	2900	1621	SW		Yes
KLD	AFS 160/INS/PB	2900	778	WNW		Yes



Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	56.5	0.00
INT-PB	Internal Plasterboard Stud Wall	19.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Tile (8mm)
BED	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		llot	Minim		Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performan	/ Ice	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-0P9XUH-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B302, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	87.5	Open
Unconditioned*	3.2	NatHERS climate zone
Total	90.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	28.1	7.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-0P9XUH-01</u>. When using either link.

http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B302, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



6.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	ge Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	ilder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	Sur	Bu	Sur	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	47.62
BED 1	Bedroom	11.98
ENS 1	Night Time	5.12
BED 2	Bedroom	10.02
STUDY	Day Time	8.12
BATH	Day Time	4.60
LDRY	Unconditioned	3.22

Window and glazed door type and performance

Default* windows

Window ID	Window Description	dow Description Maximum		Description Maximum SHGC		Maximum J-value*SHGC*SHGC substitut tolerance range lower limit uppe2.910.440.420.462.900.510.480.54	SHGC substitution tolerance ranges		
		U-value*	0	lower limit	upper limit				
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46				
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54				

Custom* windows

Window ID	Window Description	Maximum U-value* SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-005-03 B	3.10	2800	2400	Awning	29	SSW	None
BED 2	ATB-005-03 B	3.09	2800	600	Awning	58	SSW	None
BED 2	ATB-006-03 B	3.08	2900	2400	Sliding	45	WNW	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-006-03 B	3.06	2900	2150	Sliding	45	SSW	None
KLD	ATB-006-03 B	3.05	2800	3660	Fixed	0	NW	None
STUDY	ATB-006-03 B	3.07	2900	2400	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC ³	SHGC substitution tolerance ranges
	p	U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC [*]	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								
External door schedule								
Location			Height	(mm)	Width (I	mm) O	pening %	Orientation
None								

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4200	SSW		Yes
BED 2	AFS 160/INS/PB	2900	3565	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW	2502	Yes
KLD	AFS 160/INS/PB	2900	2786	SSW		Yes
KLD	AFS 160/INS/PB	2900	321	WNW		Yes
KLD	AFS 160/INS/PB	2900	297	NNE		Yes
KLD	AFS 160/INS/PB	2900	3783	NW		Yes
KLD	AFS 160/INS/PB	2900	1417	SW		Yes
STUDY	AFS 160/INS/PB	2900	2701	WNW	2511	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	63.8	0.00
INT-PB	Internal Plasterboard Stud Wall	72.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	47.6	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
LDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.15	Tile (8mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
News			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LDRY	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed
Ceiling fans				

Location Quantity Diameter (mm) None

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		llot	Minim		Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performan	/ Ice	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-Z9LCJP-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	68.0	Open
Unconditioned*	4.4	NatHERS climate zone
Total	72.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	26.0	7.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-Z9LCJP-01</u>. When using either link.

http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:







#HR-Z9LCJP-01 NatHERS Certificate

6.5 Star Rating as of 10 Apr 2024

Certificate check	Approva	l stage	Construc	HOUSE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof		·	·		
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		IndeX's scine. In sec
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	41.43
BED 1	Bedroom	11.03
ENS 1	Night Time	4.46
BED 2	Bedroom	11.10
BATH	Unconditioned	4.38

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	3.13	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	3.14	2800	600	Awning	58	SSW	None
BED 2	ATB-003-01 B	3.15	1900	2400	Awning	45	ESE	None
KLD	ATB-003-01 B	3.12	2800	4800	Awning	39	ESE	None
KLD	ATB-004-01 B	3.11	2900	2750	Sliding	45	SSW	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Windo	low Description		on Maximum		M SHGC*	SHGC sub tolerance	estitution ranges	
						U-value	^	lower limit	upper limit
None									
Custom* roof	windows							SHGC sub	stitution
Window ID	Windo	ow Description	1			Maximu U-value	* SHGC*	tolerance	ranges
None								lower limit	upper limit
Roof win	dow sch	nedule							
Location	Wind ID	low	Window no.	Opening %	y Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None					()	()			
Skylight i Skylight ID None	type and	l performa	INCE Skylight de	scription					
Skylight a	S <i>chedule</i> Skylight	e Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffus	Shaft	
None	ID	No.	length (mm)	(m²)	ation	shade	Dilluse	r Refle	ctance
External	door sci	hedule							
Location			Height	(mm)	Width (mr	m) (Opening %	Orier	itation
	- 11 (
External	wall type	9						Bulk	Reflective
Wall ID		Wall Type			Solar absor	ptance	Wall Colour	insulation (R-value)	wall wrap*
AFS 160/INS/F	РВ	AFS 160mm I	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	edule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	nt- shadi proje	ontal ng feature* ction (mm)	Vertical shading feature

2900

ESE

3073

2972

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	3711	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2990	ESE	307	Yes
KLD	AFS 160/INS/PB	2900	5791	ESE	307	Yes
KLD	AFS 160/INS/PB	2900	3088	SSW	3867	Yes
KLD	AFS 160/INS/PB	2900	750	ESE	3073	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	46.5	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Coo	ling	system
-----	------	--------

Туре	Location		Fuel Type	efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um /	Assessed
Туре	Fuel type	Water	efficie	ncy/ d	daily load
-		CER Zone	STC	-	litres]

. . . .

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		Minimum		
Туре	Fuel type	efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-Q38L6C-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	68.5	Open			
Unconditioned*	4.2	NatHERS climate zone			
Total	72.7	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	23.5	9.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-Q38L6C-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEAVENING WIDE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





#HR-Q38L6C-01 NatHERS Certificate

6.6 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approval stage		Construction stage		HOUSE which which added
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con surv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					
6.6 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.21
BED 1	Bedroom	13.02
ENS 1	Night Time	4.51
BED 2	Bedroom	10.71
BATH	Unconditioned	4.20

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	3.20	2900	2400	Sliding	45	ESE	None
BED 2	ATB-004-02 B	3.19	1900	2400	Sliding	45	ESE	None
KLD	ATB-003-01 B	3.16	2800	2650	Awning	29	ESE	None
KLD	ATB-003-01 B	3.17	2800	2650	Awning	29	ESE	None
KLD	ATB-004-02 B	3.18	2900	2400	Sliding	45	NNE	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Roof window type and performance value

Default* roof windows

Window ID	/ ID Window Description Maxi		Maximur	^m SHGC*	SHGC substitution substitut				
						U-value"		lower limit	upper limit
None									
Custom* roo	f windows								
Window ID	Wind	ow Description	1			Maximu	^m SHGC*	tolerance	ranges
						U-value*	J-value*		upper limit
None									
Roof win	dow sch	hedule							
Location	Wine ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	d performa	nce Skylight de	scription					
None									
Skylight	schedule	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuse	r Shaft Reflee	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) C	Opening %	Orien	tation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	V rptance C	Vall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm I	FCF/INS/PB		0.50	Ν	ledium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orient ation	t- shadi projec	ontal ng feature* ction (mm)	Vertical shading feature

2900

ESE

2819

3881

* Refer to glossary.

BED 1

Generated on 10 Apr 2024 using Hero 4.0 for B304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2977	ESE		Yes
KLD	AFS 160/INS/PB	2900	5820	ESE	307	Yes
KLD	AFS 160/INS/PB	2900	2811	NNE	3727	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	64.5	0.00
INT-PB	Internal Plasterboard Stud Wall	41.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed

...

6.6 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ency /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		N4 : :		
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-VJECKK-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	79.2	Open
Unconditioned*	3.8	NatHERS climate zone
Total	83.0	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.1	7.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-VJECKK-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MILONWICH HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





6.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		endeki o autori, skrava
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ eyor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.8 Star Rating as of 10 Apr 2024



Certificate check	rtificate check Approval stage		proval stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.12
KLD	Kitchen/Living	36.90
STUDY	Day Time	4.20
BED 1	Bedroom	13.16
ENS 1	Night Time	3.75
BATH	Unconditioned	3.78
BED 2	Bedroom	13.05

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-02 B	AI Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window Descripti	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.25	1900	2400	Awning	45	ESE	None
BED 2	ATB-003-01 B	3.24	1900	2400	Awning	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B305, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-02 B	3.21	2900	6000	Sliding	60	NNE	None
KLD	ATB-003-02 B	3.22	2800	3300	Awning	39	ESE	None
KLD	ATB-003-01 B	3.23	2800	1100	Awning	58	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
	·····	U-value*	lower limit upper limit
None			
Custom* roof wi	ndows		
Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								
Externa	l door sc	hedule						
Location			Height	(mm)	Width (I	mm) O	pening %	Orientation
None								

External wall type

		Solar	Wall	Bulk	Reflective
Wall ID	Wall Type	obserntense	Colour	insulation	wall
		absorptance	Colour	(R-value)	wrap*

* Refer to glossary.



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE	335	Yes
BED 1	AFS 160/INS/PB	2900	2783	SSW	3835	Yes
BED 2	AFS 160/INS/PB	2900	3006	ESE	335	Yes
KLD	AFS 160/INS/PB	2900	6800	NNE	2729	Yes
KLD	AFS 160/INS/PB	2900	6495	ESE	335	Yes
KLD	AFS 160/INS/PB	2900	4133	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	34.8	0.00
INT-PB	Internal Plasterboard Stud Wall	78.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimi efficiei STC	um A ncy/d	Assessed laily load litres]
No Whole of Home Data	3				-
Pool / spa equipment	:	Minimum			
Туре	Fuel type	efficiency / performance		Recommo capacity	ended
No Whole of Home Data	3				
Onsite Renewa	able Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	ני
No Whole of Home Data	3				
Pattony schody	ulo				

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-G527YQ-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	86.6	Open			
Unconditioned*	4.6	NatHERS climate zone			
Total	91.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	13.3	18.3		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-G527YQ-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATION WIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





6.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ rveyor checked	ilder checked	onsent authority/ rveyor checked	cupancy/other
It is not mandatory to complete this checklist.	As	Sul Sul	Bu	Sul	ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.38
HALL	Day Time	7.18
BED 1	Bedroom	13.00
ENS 1	Night Time	4.11
BED 2	Bedroom	14.11
BATH	Unconditioned	4.61
STUDY	Day Time	7.83

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	•	U-value*		lower limit	upper limit	
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62	
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
	······	U-value*	lower limit upper limit
None			



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ALM-004-01 A	3.34	970	850	Double Hung	45	SSW	None
BED 1	ATB-003-01 B	3.31	2800	600	Awning	58	WNW	None
BED 1	ALM-004-03 A	3.30	2900	1200	Casement	90	NNE	None
BED 2	ATB-004-01 B	3.33	2800	2750	Sliding	29	NW	None
ENS 1	ATB-004-01 B	3.32	970	1200	Fixed	0	WNW	None
KLD	ATB-004-02 B	3.26	2900	4950	Sliding	45	NNE	None
KLD	ATB-004-01 B	3.27	2900	1130	Fixed	0	NNW	None
STUDY	ATB-004-04 B	3.29	2900	2475	Sliding	45	WNW	None
STUDY	ATB-004-04 B	3.28	2700	2590	Fixed	0	NNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof w	indows					

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	
Skylight schedule	

Location	Skylight	Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffusor	Shaft
Location	ID	No.	length (mm)	(m²)	ation	shade	Dillusei	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B306, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS 160/INS/PB	2900	1622	SSW		Yes
BED 1	AFS 160/INS/PB	2900	3404	WNW	269	Yes
BED 1	AFS 160/INS/PB	2900	1476	NNE	2344	Yes
BED 2	AFS 160/INS/PB	2900	2828	NW		Yes
BED 2	AFS 160/INS/PB	2900	3933	SSW		Yes
BED 2	AFS 160/INS/PB	2900	990	SW		Yes
ENS 1	AFS 160/INS/PB	2900	1632	WNW	269	Yes
KLD	AFS 160/INS/PB	2900	322	SSW		Yes
KLD	AFS 160/INS/PB	2900	130	NNE		Yes
KLD	AFS 160/INS/PB	2900	5619	NNE		Yes
KLD	AFS 160/INS/PB	2900	1233	NNW		Yes
STUDY	AFS 160/INS/PB	2900	2846	WNW	815	Yes
STUDY	AFS 160/INS/PB	2900	2659	NNW		Yes



Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	51.9	0.00
INT-PB	Internal Plasterboard Stud Wall	62.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.4	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed
Colling face				

Ceiling fans

Location	Quantity	Diameter (mm)
STUDY	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Туре	Location	Min Fuel Type effic per	nimum iciency / Recom rformance capacit	mended Y

No Whole of Home Data

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					
Pool / spa equipment					
Turne		Minimum	Re	commended	

 Type
 Fuel type
 efficiency /
 recommended

 performance
 capacity

* Refer to glossary.



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-5ELZG1-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	124.2	Open
Unconditioned*	5.1	NatHERS climate zone
Total	129.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.0	9.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-5ELZG1-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-5ELZG1-01 NatHERS Certificate

|--|



Certificate check	Approval stage		Construc stage	souther instruct, science	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ wor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builde	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.2 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	37.73
ENTRY/HALL	Day Time	9.65
BED 1	Bedroom	17.13
WIR 1	Night Time	5.01
ENS 1	Night Time	7.96
BED 2	Bedroom	15.05
BED 3	Bedroom	19.15
STUDY	Day Time	12.58
BATH	Unconditioned	5.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID Window Description Maxi	Maximum SH	IGC*	SHGC substitution tolerance range	tion es	
	·····	U-value*		lower limit upp	er limit
None					

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-03 B	4.08	2800	2400	Sliding	22	NW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	4.06	2800	2400	Sliding	22	NW	None
BED 3	ATB-004-04 B	4.05	2800	2400	Sliding	22	NW	None
ENS 1	ATB-004-03 B	4.07	1070	850	Double Hung	45	WNW	None
KLD	ATB-004-04 B	4.02	2900	4200	Sliding	60	SSW	None
STUDY	ATB-004-03 B	4.04	970	2410	Fixed	0	WNW	None
STUDY	ATB-004-04 B	4.03	2900	3350	Sliding	60	SSW	None
WIR 1	ATB-004-03 B	4.09	970	850	Double Hung	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	ndow ID Window Description Maximu	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
		U-value*	onee	lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	······································	U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



Location	Height (mm) Width (mm)		Opening %	Orientation	

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1312	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	3039	NW		Yes
BED 1	AFS MC 160/INS/PB	2900	3233	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	1531	SW		Yes
BED 2	AFS MC 160/INS/PB	2900	3095	NW		Yes
BED 3	AFS MC 160/INS/PB	2900	1375	SW		Yes
BED 3	AFS MC 160/INS/PB	2900	3998	NW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2019	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	4209	SSW		Yes
STUDY	AFS MC 160/INS/PB	2900	3191	WNW		Yes
STUDY	AFS MC 160/INS/PB	2900	3941	SSW		Yes
WIR 1	AFS MC 160/INS/PB	2900	2201	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.3	0.00
INT-PB	Internal Plasterboard Stud Wall	111.5	0.00





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.8	N/A	0.15	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.4	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.2	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	2.50	Timber (12mm)
WIR 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	260	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	3	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	260	Sealed
ENTRY/HALL	1	Downlight	190	Sealed


Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	2	Downlight	190	Sealed
WIR 1	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
Туре		Fuel type	Hot Water CER Zone	Minir effici STC	num ency /	Assessed daily load [litres]
No Whole of Home Data						

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-Y02JVL-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	97.4	Open
Unconditioned*	5.6	NatHERS climate zone
Total	102.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	16.9	8.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-Y02JVL-01.

When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-Y02JVL-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc	Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	lider checked	nsent authority/ veyor checked	cupancy/other	
It is not mandatory to complete this checklist.	Ass	Col	Bui	Col	Ő	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof		'	·	'		
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

7.4 Star Rating as of 10 Apr 2024



Certificate check Approval sta		stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.98
KLD	Kitchen/Living	52.79
BED 1	Bedroom	9.41
BED 2	Bedroom	9.92
ENS 1	Night Time	4.31
BED 3	Bedroom	11.94
BATH	Unconditioned	5.60

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit	
None				

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	4.15-B	2800	1100	Fixed	0	ESE	None
BED 1	ATB-003-03 B	4.15-A	2800	1100	Awning	63	ESE	None
BED 2	ATB-004-03 B	4.14	2800	2150	Sliding	22	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	4.13	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	4.16-B	2800	1100	Fixed	0	ESE	None
BED 3	ATB-003-03 B	4.16-A	2800	1100	Awning	63	ESE	None
KLD	ATB-004-03 B	4.12	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	4.10	2900	4202	Sliding	60	SSW	None
KLD	ATB-004-03 B	4.11	2900	4202	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

7.4 Star Rating as of 10 Apr 2024

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3475	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	3443	ESE		No
BED 3	AFS MC 160/INS/PB	2900	3573	ESE		Yes
ENS 1	AFS MC 160/INS/PB	2900	1024	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	4483	ESE		No
KLD	AFS MC 160/INS/PB	2900	8878	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	63.6	0.00
INT-PB	Internal Plasterboard Stud Wall	70.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	50.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	1	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	8	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2700

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------



Roof type

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	ium A	ssessed
Туре		Fuel type	Water	efficie	ency/d	laily load
			CER Zone	STC	[litres]
No Whole of Home Data						
Pool / spa equipment						
			Minimun	n	Recomme	ended

Fuel type efficiency / Туре capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-MLG9K9-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B403, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	95.8	Open			
Unconditioned*	4.6	NatHERS climate zone			
Total	100.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	4.1	12.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-MLG9K9-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B403, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



8.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	nt authority/ or checked	checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builder	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.4 Star Rating as of 10 Apr 2024



Certificate check	Ite check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

HOUSE

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.94
KLD	Kitchen/Living	42.75
BED 1	Bedroom	21.51
ENS 1	Night Time	4.75
BED 2	Bedroom	9.42
BED 3	Bedroom	10.44
BATH	Unconditioned	4.61

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	4.23	1900	2400	Sliding	45	NNE	None
BED 1	ATB-004-03 B	4.24	970	2410	Fixed	0	ESE	None
BED 2	ATB-003-03 B	4.22	2800	3000	Awning	28	ESE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-03 B	4.19	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	4.20	1900	2400	Sliding	45	SSW	None
KLD	ATB-004-03 B	4.17	2900	5475	Sliding	60	NNE	None
KLD	ATB-004-03 B	4.18	970	2410	Fixed	0	ESE	None

Roof window type and performance value

Default* roc	of windows									etitution
Window ID	Wind	low Descriptio	on				Maximum	SHGC*	tolerance	ranges
		-					U-value*		lower limit	upper limit
None										
Custom* ro	of windows									
Mindaw ID	10/5-0						Maximum	0100*	SHGC sub tolerance	ostitution ranges
	vvind	low Descriptio	n				U-value*	SHGC* _ lue*	lower limit	upper limit
None										
Roof wi	ndow sc	hedule								
Location	Wir ID	ndow	Window no.	Openii %	ng Ho (n	eight nm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None										
Skylight	t type an	d perform	ance							
Skylight ID	51	,	Skylight de	scription	า					
None										
Skylight	t schedu	le								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orien ation	it-	Outdoor shade	Diffuser	Shaft Refle	ctance
None										
Externa	l door se	chedule								
Location			Height	(mm)	Wid	th (m	m) Op	ening %	Orier	ntation
None								-		



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1704	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	598	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2998	NNE		Yes
BED 1	AFS MC 160/INS/PB	2900	3795	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2990	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3699	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	3627	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	2875	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	6777	NNE	4096	Yes
KLD	AFS MC 160/INS/PB	2900	4077	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	2134	WNW	2567	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.4	0.00
INT-PB	Internal Plasterboard Stud Wall	68.2	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.2	N/A	0.15	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	2.50	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction Solar insulation absorptance (R-value)

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	ium A	Assessed
Туре		Fuel type	Water	efficie	ency/ c	laily load
			CER Zone	STC]	litres]
No Whole of Home Data						
Pool / spa equipment						
			Minimur	n	Recomm	ended

Fuel type efficiency / Туре capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australian Freemastation Rating Council Assesses floor and the floor area modeling in the software for the purpose of the NMHERS assessment. Mole, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software for the purpose of the NMHERS assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area modeling in the software assessment. Note, this may not be consistent with the floor area assessment. Note within a dowling and the software assessment floor within a dowling in the software assessment floor withing. Software predicts and shore a MERS (Window Energy Rating Scheme) rating. COP Coefficient of parformance Custom windows Windows listent AMHERS dowling the are asvaliable on the market in Australia and have a VERS (Window Energy Rating Scheme) rating. Energy use This is your horters rating without ado as pacefic type of window produce and whose a properties have been darvad by statistical methods. ERR Energy use This is your horters rating without ado and the cost as a down window coduce and whose a software and must not be modeling as a software and must not be modeled as a door when opening to a minimally ventilated combon: in a Class 2 building. Exposure category exposed terms with no cobructions e a simi forth (in outpace) as a software floor as a software and must not be modeled as a door when opening to a minimally ventilated mastate as a bababe and must no	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the foor area modeling in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling pertrations failures that requires a penetration the exiling with small holes through the celling for winn, e.g. celling thans; pandare lights, and healing and cooling ducts. Conditioned a zone within a deling that is expected to require healing and cooling ducts. Coefficient of performance Coefficient of performance Coefficient of performance Entry Efficiency Rate, measure of how much cooling can be achieved by an alr conditioner for a single NMh of electricity input Energy use This is yooi homes rating without solar or catatines. Energy use The alr cost to cost performance Exercy use The alr cost to cost performance Energy use This is yooi homes rating without solar or catatines. Energy use The alr cost to cost performance Exercy use The alr cost to cost adapties below Exercy use algory - sopent train with modestructors at a single NMh of electricity input Exercs all cost and the cost and the single diment of the algore diment of the well states of the vicing and adapties below Exercs all cost and the diment of the single diment of the single diment of the well states of the vicing adapties below Exercs all co	AFRC	Australian Fenestration Rating Council
Caling penetrations features that require a penetration to the ceiling, including downlingts, sends tigs, and heating and occing outs. Conditioned a zone within a dwelling that is expected to require heating and occing outs. Including and penetrations. In some circumstances it will include garages. COP Coefficient of penformance Coefficient of penformance Costom windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows lated in AustERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Energy value The end costs occiely including, but not limited to, costs to the building user, the environment and energy networks (sis defined in the ABCB Housing Provisions Standard). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed terrain with no abstructions a g far grazing land, cosan-fontage, desrt, exposed high-rise unit (usually above 10 foors). Exposure category - exposed	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costom windows windows list of in ABHERS software that are available on the market in Australia and have a WERS (Window Energy Raling Software) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. Energy use The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door there signify ventilation benefits in the modelling software end must not be modelled as a door when opening to a minimality ventilated corridor in a Class 2 building. Exposure category - sopped terrain with no obstructions as 1 a final grazing land, cocan-fontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubartan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubardan housing, heavity wegetaled builtand eras. Exposure category - sopped terrain with numerous, closely spaced obstructions below 10m ag, glubardan housing, heavity wegetaled builtand eras. Exposure category - sopped	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Distant windows windows listed in what EES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERF Energy Efficiency Ratin, messure of how much cooling can be achieved by an air conditione for a single KMh of electricity input Energy usale The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure see exposure categories open categories below Exposure category - exposed terrain with no obstructions a g, flat grazing land, costs to the building line with (usually above 10 floors). Exposure category - open terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ocks, elevated units (e.g, above 3 floors). Exposure category - usposed terrain with numeros, closely speed distructions below 10m e g, suburban housing, heavily vegetated bushind ock 00m g, and	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NatHERS software that are available on the market in Austalia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type dividue you product and windows properties have been divend by statistical methods. ERP This syour hornes rating without solar or batteries. Energy use This syour hornes rating without solar or batteries. Energy use The solar horne costs to dive houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Extrance door Itemas and your houlding user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - expend ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - suburban ternain with no obstructions a g. fait grazing land, coean-fortlage, desert, exposed high-tise unit (sually above 10 foors). Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Exposure category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Roticol Lass Category - protected ternain with no uncouncy, dockey spaced obstructions over 10 m e g. oily and industrial areas. Rotational shading feature proxide d	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. EER Energy Efficiency Relix, messure of how much cooling can be achieved by an ir conditioner for a single WNh of electricity input Energy value The net cost is society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door These signify vertiliation beends in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure actegory - exposed Entransition of the set of the	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input Energy value The is syor hores rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Stardard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - opposed terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - oppon terrain with no obstructions e.g. find grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - suburban terrain with numerous, closely spaced obstructions or 10 m.g. g. divy and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions or 10 m.g. g. divy and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, variandish, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings, by therefunction and use, and assigns a dasfigriad a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class <t< th=""><th>Default windows</th><th>windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.</th></t<>	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated coridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g., flat grazing land, ocean frontage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - open terrain with no unercus, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushtand areas. Exposure category - suburban terrain with numerous, dosely spaced obstructions ore 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal provides. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Net zero home a hore that achieves a net zero energy value? Opening percentage the openability percentage or operable (movisined value. For example, if the valitolous in uspecific in the doou	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to scole/including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door Press signify ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated conidor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bigh-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed bight-rise unit (usually above 10 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily regelated bushind areas. Horizontal shading feature provides shading to the building. In the houzontal plane, e.g. eaves, varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code Class 10a buildings. Definitons can be found at www.abcb.gov.au. Net zero home a home that achieves an at zare are construction doe. Horizontal Plane, e.g. eaves. varandhis, peogradis, carports, or overhangs or balconies in the concentality. Recommended capacity the copenability percentage or openable (moveable) area of doors or windows	Energy use	This is your homes rating without solar or batteries.
Entrance doorthese signify ventilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.Exposure category - exposedterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 floors).Exposure category - openterrain with no dostructions e.g. flat grazing land, cocen-frontage, desert, exposed high-rise unit (usually above 10 m, farmand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).Exposure category - rotectedterrain with numerous, closely spaced obstructions below 10 m e.g. suburban housing, heavily vegetated bushland areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandshs, genages, carports, or overhangs or balconies from upper levels.National Construction Codethe VCC groups buildings by thrif function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov au.Recommended capacitythe openability percentage or operable (moveshel) area of doors or windows that is used in ventilation calculations.Provisional valuea assumed value that does not represent an actual value. For example, if the wall solution calculations.Recommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired conflot conflions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sui	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed Exposure category - exposed terrain with no obstructions e.g. fall grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, familand with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCR groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 0 a buildings. Definitions can be found at www abbc.gov.au. Net zero home a home that achieves an et zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are cultican in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a tercommended to y a suitable value. If provides insulative properties. Recommended capacity this is the	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ceean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with new obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushiand areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (the NCC groups buildings can be found at www.abcb.gov.au. Nate zero home a home that achieves a net zero energy value*. Provisional value an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled Acceptable provisional values are outlined in the NAHERS Technical Note and can be found at www.nathers.gov.au Reformended capacity this is the capacity or size of equipment that is recommended by NaHERS to achieve the desired comfort conducts in the instal selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gin coefficie	Exposure	see exposure categories below
Exposure category - open terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 horos). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Horizontal shanding feature provides shading to the building in the horizontal plane, e.g. eves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achiever the desired comfort conditions in the zone or zones serviced. This is a recommended to and the final selection sing should be confirmed by a suitabby qualified person. Roof wi	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburbanterrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.Exposure category - protectedterrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandans, pergolas, carports, or overhangs or balconies from upper levels.National Construction Codethe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached(NCC) ClassClass 10a buildings. Definitions can be found at www.abcb.gov.au.Net zero homea home that achives a net zero energy value".Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person.Reflective wrap (also known as foil)can be applied to wallis, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. cleves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Groups buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a sultably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Rod window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC Croups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selecton sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the faction of incident solar radiation admitted through a window, sub diffuery transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. <tr< th=""><th>Exposure category - protected</th><th>terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.</th></tr<>	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ⁷ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot direcity transmitte as well as absorbed and subs	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the Nath/ERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by Nath/ERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roots and cellings. When combined with an appropriate aingap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Skylight (also known as roof [light (SHGC)] for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-s	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded uni with flexible reflective tubing (light well) and a diffuser at celling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought a	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 2.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 2.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- 	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC isSkylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20 mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-QK1POG-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B404, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	81.7	Open			
Unconditioned*	6.4	NatHERS climate zone			
Total	88.0	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	1.9	13.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-QK1POG-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B404, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEADY LAINE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





8.6 Star Rating as of 10 Apr 2024



Certificate check		Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.6 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ns to the N	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.03
KLD	Kitchen/Living	43.42
BED 1	Bedroom	14.88
ENS 1	Night Time	3.93
BED 2	Bedroom	13.39
BATH	Unconditioned	6.36

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	Linden Zooon,pilon	U-value*		lower limit	upper limit	
Nono						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-03 B	4.29	970	1782	Fixed	0	WNW	None
BED 1	ATB-004-03 B	4.30	2800	2400	Sliding	22	NW	None
BED 2	ATB-003-03 B	4.28	2800	600	Awning	58	WNW	None
BED 2	ATB-004-03 B	4.27	2900	2400	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-03 B	4.31	970	850	Double Hung	45	SSW	None
KLD	ATB-004-03 B	4.25	2900	4977	Sliding	60	NNE	None
KLD	ATB-004-03 B	4.26	2900	3719	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Maximum SHGC ³	SHGC substitution tolerance ranges		
	·····	U-value*	lower limit upper limit	
None				
Custom* roof v	vindows			
Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges	
		U-value*	lower limit upper limit	
None				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoo shade	r Diffuse	r Shaft Reflec	ctance
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (mm)	Opening %	Orien	tation
None									
Externa	l wall typ	е							
Wall ID		Wall Type			Sola abs	ar orptance	Wall Colour	Bulk insulation	Reflective wall

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B404, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

wrap*

(R-value)



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1782	WNW		Yes
BED 1	AFS MC 160/INS/PB	2900	3440	SSW		Yes
BED 1	AFS MC 160/INS/PB	2900	1025	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	2820	NW		Yes
BED 2	AFS MC 160/INS/PB	2900	3744	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3576	NNE	2497	Yes
ENS 1	AFS MC 160/INS/PB	2900	2077	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	2188	NNW		Yes
KLD	AFS MC 160/INS/PB	2900	5011	NNE	1730	Yes
KLD	AFS MC 160/INS/PB	2900	4021	WNW	1944	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	47.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	2.50	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (m	m)
None			
Roof type			
Construction	Added insulation	Solar	Roof Colour

None

* Refer to glossary.

absorptance

(R-value)



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy / o	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performan	ce	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedul	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-B4XUF6-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024			
Prepared by	Brewster Murray			

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	124.2	Open			
Unconditioned*	5.1	NatHERS climate zone			
Total	129.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.2	8.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-B4XUF6-01</u>. When using either link, ensure you are visiting





* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-B4XUF6-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construct stage		tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ syor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor		·	·	·	·
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	37.73
ENTRY/HALL	Day Time	9.65
BED 1	Bedroom	17.13
WIR 1	Night Time	5.01
ENS 1	Night Time	7.96
BED 2	Bedroom	15.05
BED 3	Bedroom	19.15
STUDY	Day Time	12.58
BATH	Unconditioned	5.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub	stitution ranges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-03 B	5.08	2800	2400	Sliding	22	NW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	5.06	2800	2400	Sliding	22	NW	None
BED 3	ATB-004-04 B	5.05	2800	2400	Sliding	22	NW	None
ENS 1	ATB-004-03 B	5.07	1070	850	Double Hung	45	WNW	None
KLD	ATB-004-04 B	5.02	2900	4200	Sliding	60	SSW	None
STUDY	ATB-004-03 B	5.04	970	2410	Fixed	0	WNW	None
STUDY	ATB-004-04 B	5.03	2900	3350	Sliding	60	SSW	None
WIR 1	ATB-004-03 B	5.09	970	850	Double Hung	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
	· · · · · · · · · · · · · · · · · · ·	U-value*	0.100	lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

.....

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1312	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	3039	NW		Yes
BED 1	AFS MC 160/INS/PB	2900	3233	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	1531	SW		Yes
BED 2	AFS MC 160/INS/PB	2900	3095	NW		Yes
BED 3	AFS MC 160/INS/PB	2900	1375	SW		Yes
BED 3	AFS MC 160/INS/PB	2900	3998	NW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2019	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	4209	SSW		Yes
STUDY	AFS MC 160/INS/PB	2900	3191	WNW		Yes
STUDY	AFS MC 160/INS/PB	2900	3941	SSW		Yes
WIR 1	AFS MC 160/INS/PB	2900	2201	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.3	0.00
INT-PB	Internal Plasterboard Stud Wall	111.5	0.00

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.7	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
WIR 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	260	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	3	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	260	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
STUDY	2	Downlight	190	Sealed
WIR 1	1	Downlight	190	Sealed

Ceiling fans

0		
Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
None				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um .	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity	

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-O0DWD7-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	97.4	Open			
Unconditioned*	5.6	NatHERS climate zone			
Total	102.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	15.6	10.1		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-O0DWD7-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE HEADY LAINE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		sound and a second
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.99
KLD	Kitchen/Living	52.79
BED 1	Bedroom	9.41
BED 2	Bedroom	9.92
ENS 1	Night Time	4.31
BED 3	Bedroom	11.94
BATH	Unconditioned	5.60

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID W	Window Description	Maximum SHGC	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	5.15-B	2800	1100	Fixed	0	ESE	None
BED 1	ATB-003-03 B	5.15-A	2800	1100	Awning	58	ESE	None
BED 2	ATB-004-03 B	5.14	2800	2150	Sliding	22	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	5.13	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	5.16-B	2800	1100	Fixed	0	ESE	None
BED 3	ATB-003-03 B	5.16-A	2800	1100	Awning	58	ESE	None
KLD	ATB-004-03 B	5.12	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	5.10	2900	4202	Sliding	60	SSW	None
KLD	ATB-004-03 B	5.11	2900	4202	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
	·····	U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit u	ıpper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

ID	No.	length (mm)	(m²)	ation	shade	Diffuser	Reflectance
None							

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

* Refer to glossary.

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3475	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	3443	ESE		No
BED 3	AFS MC 160/INS/PB	2900	3573	ESE		Yes
ENS 1	AFS MC 160/INS/PB	2900	1024	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	4483	ESE		No
KLD	AFS MC 160/INS/PB	2900	8878	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	63.6	0.00
INT-PB	Internal Plasterboard Stud Wall	70.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.8	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	1	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	8	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2700

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	I	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system		Hot	Minim	um	Accessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performano	ce	Recom capacit	mended Y
No Whole of Home Data					
Onsite Renewa	ble Energy schedul	e			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-HBYXHT-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B503, 116-120 Frenchs Forest Rd Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	95.8	Open			
Unconditioned*	4.6	NatHERS climate zone			
Total	100.4	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling			
Modelled	3.9	11.8			
Load limits	34	21			

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-HBYXHT-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B503, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





8.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		éveleci konoř, křenel
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.94
KLD	Kitchen/Living	42.75
BED 1	Bedroom	21.51
ENS 1	Night Time	4.75
BED 2	Bedroom	9.42
BED 3	Bedroom	10.44
BATH	Unconditioned	4.61

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	5.23	1900	2400	Sliding	45	NNE	None
BED 1	ATB-004-03 B	5.24	970	2410	Fixed	0	ESE	None
BED 2	ATB-003-03 B	5.22	2800	3000	Awning	28	ESE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-03 B	5.19	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	5.20	1900	2400	Sliding	45	SSW	None
KLD	ATB-004-03 B	5.17	2900	5475	Sliding	45	NNE	None
KLD	ATB-004-03 B	5.18	970	2410	Fixed	0	ESE	None

Roof window type and performance value

Default* roo	f windows									
Window ID	Win	dow Descriptio	n			Maximum	KIMUM SHGC*	tolerance ranges		
	•••••					U-value*	onee	lower limit	upper limit	
None										
Custom* roo	of windows									
Window ID	Win	dow Descriptio				Maximum	SHCC*	SHGC sub tolerance	ostitution ranges	
window iD	vviii	uow Descriptio	<i>///</i>			U-value*	3000	lower limit	upper limit	
None										
Roof wir	ndow sc	hedule								
Location	Wii ID	ndow	Window no.	Openin %	g Height (mm)	t Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None										
Skylight	type an	d perform	ance							
Skylight ID	5.		Skylight de	scription						
None										
Skylight	schedu	le								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Refle	ctance	
None										
External	door s	chedule								
Location			Height	(mm)	Width (n	nm) Op	ening %	Orier	ntation	
None				- •			-			



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	0.50	Medium	0.00	No
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1704	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	598	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2998	NNE		Yes
BED 1	AFS MC 160/INS/PB	2900	3795	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2990	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3699	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	3627	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	2875	SSW		Yes
KLD	AFS 200/INS/PB	2900	107	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	6777	NNE	4096	Yes
KLD	AFS MC 160/INS/PB	2900	4077	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	2134	WNW	2567	Yes
KLD	AFS 200/INS/PB	2900	207	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.4	0.00
INT-PB	Internal Plasterboard Stud Wall	68.2	0.00



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	21.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)	
None			

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Coo	ling	system
-----	------	--------

Туре	Location	Fı	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fu	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficien STC	m / cy/ c	Assessed daily load litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	1	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	n Capacity [kW	/]
No Whole of Home Data					



Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-EI58SM-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B504, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	81.7	Open
Unconditioned*	6.4	NatHERS climate zone
Total	88.0	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	1.8	11.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-EI58SM-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B504, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-EI58SM-01 NatHERS Certificate

8.9 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ vor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					·
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			'	'	·
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof			·	·	·
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B504, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

8.9 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion	Parties Technic alfred	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.03
KLD	Kitchen/Living	43.42
BED 1	Bedroom	14.88
ENS 1	Night Time	3.93
BED 2	Bedroom	13.39
BATH	Unconditioned	6.36

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum SH	IGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
Nono						

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-03 B	5.29	970	1782	Fixed	0	WNW	None
BED 1	ATB-004-03 B	5.30	2800	2400	Sliding	22	NW	None
BED 2	ATB-003-03 B	5.28	2800	600	Awning	58	WNW	None
BED 2	ATB-004-03 B	5.27	2900	2400	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-03 B	5.31	970	850	Double Hung	45	SSW	None
KLD	ATB-004-03 B	5.25	2900	4977	Sliding	60	NNE	None
KLD	ATB-004-03 B	5.26	2900	3719	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID Windo	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
	p	U-value*	lower limit upper limit
None			
Custom* roof v	vindows		
Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoo shade	r Diffuse	r Shaft Reflec	tance
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (mm)	Opening %	Orien	tation
None									
Externa	l wall typ	е							
Wall ID		Wall Type			Sola abs	ar orptance	Wall Colour	Bulk insulation	Reflective wall

* Refer to glossary.

wrap*

(R-value)



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1782	WNW		Yes
BED 1	AFS MC 160/INS/PB	2900	3440	SSW		Yes
BED 1	AFS MC 160/INS/PB	2900	1025	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	2820	NW		Yes
BED 2	AFS MC 160/INS/PB	2900	3744	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3576	NNE	2497	Yes
ENS 1	AFS MC 160/INS/PB	2900	2077	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	2188	NNW		No
KLD	AFS MC 160/INS/PB	2900	5011	NNE	1730	Yes
KLD	AFS MC 160/INS/PB	2900	4021	WNW	1944	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	47.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Tile (8mm)


Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
News			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

None	

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)	
None					

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				·	
Hot water system		Hot	Minim		Assassad
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency performa	r / nce	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedu	le			

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-87UOSL-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type				
Conditioned*	124.2	Open				
Unconditioned*	5.1	NatHERS climate zone				
Total	129.4	56 - Mascot AMO				
Garage	0.0					



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.4	12.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-87UOSL-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MATION WIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



6.6 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	DEBCY MARKET, STARRET	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sessor checked	rsent authority/ veyor checked	lder checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Buil	Cor sur	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	37.73
ENTRY/HALL	Day Time	9.65
BED 1	Bedroom	17.13
WIR 1	Night Time	5.01
ENS 1	Night Time	7.96
BED 2	Bedroom	15.05
BED 3	Bedroom	19.15
STUDY	Day Time	12.58
BATH	Unconditioned	5.13

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum SH	IGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upp	er limit	
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-03 B	6.08	2800	2400	Sliding	22	NW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	6.06	2800	2400	Sliding	22	NW	None
BED 3	ATB-004-04 B	6.05	2800	2400	Sliding	22	NW	None
ENS 1	ATB-004-03 B	6.07	1070	850	Double Hung	45	WNW	None
KLD	ATB-004-04 B	6.02	2900	4200	Sliding	60	SSW	None
STUDY	ATB-004-03 B	6.04	970	2410	Fixed	0	WNW	None
STUDY	ATB-004-04 B	6.03	2900	3350	Sliding	60	SSW	None
WIR 1	ATB-004-03 B	6.09	1070	850	Double Hung	45	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*	0	lower limit upper	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	1312	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	3039	NW		Yes
BED 1	AFS MC 160/INS/PB	2900	3233	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	1531	SW		Yes
BED 2	AFS MC 160/INS/PB	2900	3095	NW		Yes
BED 3	AFS MC 160/INS/PB	2900	1375	SW		Yes
BED 3	AFS MC 160/INS/PB	2900	3998	NW		Yes
ENS 1	AFS MC 160/INS/PB	2900	2019	WNW		Yes
KLD	AFS MC 160/INS/PB	2900	4209	SSW		Yes
STUDY	AFS MC 160/INS/PB	2900	3191	WNW		Yes
STUDY	AFS MC 160/INS/PB	2900	3941	SSW		Yes
WIR 1	AFS MC 160/INS/PB	2900	2201	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.3	0.00
INT-PB	Internal Plasterboard Stud Wall	111.5	0.00

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B601, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.1	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.7	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.15	Timber (12mm)
WIR 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.15	Timber (12mm)

Ceiling type

BATHSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 2SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 3SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENS 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 2SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 3SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENS 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoBED 3SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENS 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENS 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALLSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoKLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLDSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoSTUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDYSLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00NoWIR 1SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling3.00No	KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
WIR 1 SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling 3.00 No	STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
	WIR 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	260	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	3	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	260	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	2	Downlight	190	Sealed
WIR 1	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Mana				

None

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	Im (hasasad

		Hot	Minimum	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-BWPE8T-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type		
Conditioned*	97.4	Open		
Unconditioned*	5.6	NatHERS climate zone		
Total	102.9	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	22.1	12.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-BWPE8T-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B602, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

MINONWER HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	int authority/ or checked	r checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.99
KLD	Kitchen/Living	52.79
BED 1	Bedroom	9.41
BED 2	Bedroom	9.92
ENS 1	Night Time	4.31
BED 3	Bedroom	11.94
BATH	Unconditioned	5.60

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	6.15-B	2800	1100	Fixed	0	ESE	None
BED 1	ATB-003-03 B	6.15-A	2800	1100	Awning	58	ESE	None
BED 2	ATB-004-03 B	6.14	2800	2200	Sliding	22	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	6.13	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	6.16-B	2800	1100	Fixed	0	ESE	None
BED 3	ATB-003-03 B	6.16-A	2800	1100	Awning	58	ESE	None
KLD	ATB-004-03 B	6.12	970	2410	Fixed	0	ESE	None
KLD	ATB-004-03 B	6.10	2900	4202	Sliding	60	SSW	None
KLD	ATB-004-03 B	6.11	2900	4202	Sliding	60	SSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
	·····			lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation



Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	3475	ESE		Yes
BED 2	AFS MC 160/INS/PB	2900	2880	NNE		Yes
BED 2	AFS MC 160/INS/PB	2900	3443	ESE		No
BED 3	AFS MC 160/INS/PB	2900	3573	ESE		Yes
ENS 1	AFS MC 160/INS/PB	2900	1024	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	4483	ESE		No
KLD	AFS MC 160/INS/PB	2900	8878	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	63.6	0.00
INT-PB	Internal Plasterboard Stud Wall	70.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.8	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	1	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	8	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed



Ceiling fans

KLD 1 2700	Location	Quantity	Diameter (mm)
	KLD	1	2700

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				
Onsite Renewable	Energy schedu	le		

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

No Whole of Home Data

Battery schedule

Туре

Storage Capacity [kWh]

No Whole of Home Data





Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-9V1H9F-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	95.8	Open
Unconditioned*	4.6	NatHERS climate zone
Total	100.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	7.3	13.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com.</u> <u>au/pdf/HR-9V1H9F-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOLE LUISE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-9V1H9F-01 NatHERS Certificate

8.0 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage Stag		Construc	Construction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked. Note: The boxes indicate when and who should check each item.	sessor checked	nsent authority/ veyor checked	lider checked	nsent authority/ veyor checked	cupancy/other
It is not mandatory to complete this checklist.	Ass	Col	Bui	Col	Ő
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof		'	·	'	
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.0 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Poster Terror, strawe
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	·	·	·	·	·
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.94
KLD	Kitchen/Living	42.75
BED 1	Bedroom	21.51
ENS 1	Night Time	4.75
BED 2	Bedroom	9.42
BED 3	Bedroom	10.44
BATH	Unconditioned	4.61

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-03 B	6.23	1900	2400	Sliding	45	NNE	None
BED 1	ATB-004-03 B	6.24	970	2410	Fixed	0	ESE	None
BED 2	ATB-003-03 B	6.22	2800	3000	Awning	28	ESE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-004-03 B	6.19	970	2410	Fixed	0	ESE	None
BED 3	ATB-004-03 B	6.20	1900	2400	Sliding	45	SSW	None
KLD	ATB-004-03 B	6.17	2900	5475	Sliding	60	NNE	None
KLD	ATB-004-03 B	6.18	970	2410	Fixed	0	ESE	None

Roof window type and performance value

Default* roo	of windows								
Window ID	Wind	low Descriptio	n			Maximum	I SHGC*	SHGC substitution tolerance ranges	
	••••					U-value*	onee	lower limit	upper limit
None									
Custom* roo	of windows								
Window ID	\ N /in	dow Docorintio	-			Maximum		SHGC sub tolerance	ostitution ranges
window iD	vvind	low Descriptio	'n			U-value*	SHGC*	lower limit	upper limit
None									
Roof wi	ndow sc	hedule							
Location	Wir ID	ndow	Window no.	Openin %	ng Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight	type an	d performa	ance						
Skylight ID			Skylight de	scription	I				
None									
Skylight	schedu	le							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	. Shaft Refle	ctance
None									
External	l door sa	chedule							
Location			Height	(mm)	Width (m	nm) O	pening %	Orier	ntation
None									



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	0.50	Medium	0.00	No
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1704	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	598	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2998	NNE		Yes
BED 1	AFS MC 160/INS/PB	2900	3795	ESE		Yes
BED 1	AFS MC 160/INS/PB	2900	2990	SSW		Yes
BED 2	AFS MC 160/INS/PB	2900	3699	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	3627	ESE		Yes
BED 3	AFS MC 160/INS/PB	2900	2875	SSW		Yes
KLD	AFS 200/INS/PB	2900	107	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	6777	NNE	4096	Yes
KLD	AFS MC 160/INS/PB	2900	4077	ESE		Yes
KLD	AFS MC 160/INS/PB	2900	2134	WNW	2567	Yes
KLD	AFS 200/INS/PB	2900	207	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	55.4	0.00
INT-PB	Internal Plasterboard Stud Wall	68.2	0.00



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	21.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.4	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Type L	ocation		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Type L	ocation		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
		Hot	Minim	ium A	Assessed
Туре	Fuel type	Water	efficie	ency/ d	laily load
		CER Zone	STC	Г	litres1

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for B603, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]	
No Whole of Home Data			

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-LE0AJ9-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	B604, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	10 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	81.7	Open			
Unconditioned*	6.4	NatHERS climate zone			
Total	88.0	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	4.9	13.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-LE0AJ9-01.

When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-LE0AJ9-01 NatHERS Certificate

8.3 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occl
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for B604, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

8.3 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage		tion	DARC AURIC CRAW	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	6.03
KLD	Kitchen/Living	43.42
BED 1	Bedroom	14.88
ENS 1	Night Time	3.93
BED 2	Bedroom	13.39
BATH	Unconditioned	6.36

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
Nono					

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-03 B	6.29	970	1782	Fixed	0	WNW	None
BED 1	ATB-004-03 B	6.30	2800	2400	Sliding	22	NW	None
BED 2	ATB-003-03 B	6.28	2800	600	Awning	58	WNW	None
BED 2	ATB-004-03 B	6.27	2900	2400	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
ENS 1	ATB-004-03 B	6.31	970	850	Double Hung	45	SSW	None
KLD	ATB-004-03 B	6.25	2900	4977	Sliding	60	NNE	None
KLD	ATB-004-03 B	6.26	2900	3719	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC*	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoo shade	r Diffuse	r Shaft Reflec	tance
None									
Externa	l door sc	hedule							
Location			Height	(mm)	Width (mm)	Opening %	Orien	tation
None									
Externa	l wall typ	е							
Wall ID		Wall Type			Sola abs	ar orptance	Wall Colour	Bulk insulation	Reflective wall

* Refer to glossary.

wrap*

(R-value)



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1782	WNW		Yes
BED 1	AFS MC 160/INS/PB	2900	3440	SSW		Yes
BED 1	AFS MC 160/INS/PB	2900	1025	SW		Yes
BED 1	AFS MC 160/INS/PB	2900	2820	NW		Yes
BED 2	AFS MC 160/INS/PB	2900	3744	WNW		Yes
BED 2	AFS MC 160/INS/PB	2900	3576	NNE	2497	Yes
ENS 1	AFS MC 160/INS/PB	2900	2077	SSW		Yes
KLD	AFS MC 160/INS/PB	2900	2188	NNW		No
KLD	AFS MC 160/INS/PB	2900	5011	NNE	1730	Yes
KLD	AFS MC 160/INS/PB	2900	4021	WNW	1944	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	47.0	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.15	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

	antity	Diameter (mm)
None		

* Refer to glossary.



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)	
None					

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	9	Recomr capacity	nended V
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k	wi

1360	onontatation	
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-HN3O9H-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	49.7	Suburban			
Unconditioned*	3.9	NatHERS climate zone			
Total	53.6	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	31.5	5.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-HN3O9H-01. When using either link, ensure you are visiting http://www.hero-software. com.au



HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





6.2 S	itar F	Rating	as o	f 10	Apr	2024
-------	--------	--------	------	------	-----	------



Certificate check	Approva	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asset	Conse surve	Builde	Conse surve	Occul	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check						
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor						
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

6.2 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	36.91
BED	Bedroom	12.82
BATH	Unconditioned	3.90

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	

Custom* windows

Window ID	Window Description Ma	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED	ATB-004-01 B	G.05	2900	3000	Sliding	45	WNW	None
KLD	ATB-003-03 B	G.02	2800	2400	Awning	45	WNW	None
KLD	ATB-003-03 B	G.03	2800	2400	Awning	45	WNW	None
KLD	ATB-004-01 B	G.04	2900	1900	Sliding	45	NNE	None



Roof window type and performance value

Default* roof windows

Window ID	Winde	ow Descriptio	n				Maximu U-value	m * SHGC*	SHGC substitution tolerance ranges		
							0-value		lower limit	upper limit	
None											
Custom* roof	windows								SHGC sub	stitution	
Window ID	Wind	ow Descriptio	n				Maximu	^m SHGC*	tolerance	ranges	
		•	-				U-value	*	lower limit	upper limit	
None											
Roof win	dow sch	nedule									
	Wine	dow	Window	Openir	ng He	ight	Width	Orient-	Outdoor	Indoor	
Location	ID		no.	%	- (m	m)	(mm)	ation	shade	shade	
None											
Clauliabt	tuno one	d parfarma	2200								
	spe and	i periorna	1//CC Skylight do	ecription							
None			Skylight de	Scription							
None											
Skylight a	schedule	e									
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient ation	:- •	Outdoor shade	Diffuser	Shaft Reflec	tance	
None											
None	door sc	hedule									
None External Location	door sc	hedule	Height	(mm)	Widt	h (mn	n) (Opening %	Orien	tation	
None External Location None	door sc	hedule	Height	(mm)	Widt	h (mn	n) (Opening %	Orien	tation	
None External Location None External	door sc. wall typ	hedule	Height	(mm)	Widt	h (mn	n) (Opening %	Orien	tation	
None External Location None External	door sc. wall typ	hedule e	Height	(mm)	Widt	h (mn	n) (Opening %	Orien Bulk	tation Reflective	
None External Location None External Wall ID	door sc wall typ	hedule e Wall Type	Height	(mm)	Widt	h (mn Solar	n) (Opening % Wall Colour	Orien Bulk insulation	tation Reflective wall	
None External Location None External Wall ID	door sc wall typ	hedule e Wall Type	Height	(mm)	Widt S	h (mn Solar absor	n) (ptance	Opening % Wall Colour	Orien Bulk insulation (R-value)	tation Reflective wall wrap*	



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED	AFS 160/INS/PB	2900	3997	WNW	2273	Yes
KLD	AFS 160/INS/PB	2900	4997	WNW	932	Yes
KLD	AFS 160/INS/PB	2900	2295	NNE	3788	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	65.9	0.00
INT-PB	Internal Plasterboard Stud Wall	19.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	2.50	Tile (8mm)
BED	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)		
None				

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fi	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fi	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minim efficie STC	um ncy /	Assessed daily load [litres]
No Whole of Home Data					•••
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance	•	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [kW	v]

Orientatation



Onsite Renewable Energy *schedule*

Type No Whole of Home Data Generation Capacity [kW]

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-FKHGGO-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type			
Conditioned*	83.9	Suburban			
Unconditioned*	3.2	NatHERS climate zone			
Total	87.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

Volume 1

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	31.0	6.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-FKHGGO-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Note, variations and additions to the NCC energy efficiency requirements Predicted Whole of Home annual may apply in some states and territories.

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB Standard: NatHERS heating and cooling load limits for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Enerav use:



Greenhouse gas emissions:

Cost:





6.1 Star Rating as of 10 Apr 2024



Certificate check	Approva	stage	Construc stage	tion	DERT LUDG STREET
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	oancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	ment is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	44.10
BED 1	Bedroom	11.98
ENS 1	Night Time	5.12
BED 2	Bedroom	10.02
STUDY	Day Time	8.12
BATH	Day Time	4.60
LDRY	Unconditioned	3.22

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-02 B	Al Thermally Broken A DG Air Fill Tint-Clear	3.60	0.23	0.22	0.24	
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-006-03 B	G.11-B	2800	2200	Sliding	45	SSW	None
BED 1	ATB-003-02 B	G.11-A	2800	1100	Awning	63	SSW	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for BG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-005-03 B	G.10	2800	600	Awning	60	SSW	None
BED 2	ATB-006-03 B	G.09	2900	2400	Sliding	45	WNW	None
KLD	ATB-005-03 B	G.06	2800	3600	Awning	40	WNW	None
KLD	ATB-006-03 B	G.07	2900	2400	Sliding	45	SSW	None
STUDY	ATB-006-03 B	G.08	2900	2400	Sliding	45	WNW	None

Roof window type and performance value

Default* roof w	vindows
-----------------	---------

Window ID	Window Description	Maximum	SHGC*	SHGC sub	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit		
None							

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper lir	mit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

* Refer to glossary.



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	4200	SSW		Yes
BED 2	AFS 160/INS/PB	2900	3565	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2997	WNW	2502	Yes
KLD	AFS 160/INS/PB	2900	3980	WNW	944	Yes
KLD	AFS 160/INS/PB	2900	2448	SSW	5134	Yes
STUDY	AFS 160/INS/PB	2900	2701	WNW	2511	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	65.4	0.00
INT-PB	Internal Plasterboard Stud Wall	72.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	2.50	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.0	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	2.50	Timber (12mm)
BED 2	CSOG-200: Concrete Slab on Ground (200mm)	0.9	N/A	0.00	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.6	N/A	2.50	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
KLD	CSOG-200: Concrete Slab on Ground (200mm)	5.3	N/A	0.00	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	0.15	Timber (12mm)
LDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	2.50	Tile (8mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	2.50	Timber (12mm)
STUDY	CSOG-200: Concrete Slab on Ground (200mm)	0.9	N/A	0.00	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LDRY	1	Exhaust Fan	350	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system				Minimum	
Туре	Location		Fuel Type	efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um A	ssessed
Туре	Fuel t	ype Water	efficie	ncy/ da	aily load
		CER Zone	STC	[1]	itres]
No Whole of Home Data					
Pool / spa equipment					
		Minim	um	_	

Recommended Туре Fuel type efficiency / capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-UP2AID-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	75.5	Suburban			
Unconditioned*	4.4	NatHERS climate zone			
Total	79.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	13.8	15.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-UP2AID-01</u>. When using either link.

http://www.hero-software.





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-UP2AID-01 NatHERS Certificate

7.1 Star Rating as of 10 Apr 2024

	1		I	1	NATIONWIDE HOUSE MARCE REPORT REPORT
Certificate check	Approval stage Construction stage		tion		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ant authority/ /or checked	er checked	ent authority/ /or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse surve)	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check			<u>'</u>		
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					

Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?		



7.1 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		IndeX's scine. In sec
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	43.75
BED 1	Bedroom	16.20
ENS 1	Night Time	4.46
BED 2	Bedroom	11.10
BATH	Unconditioned	4.38

Window and glazed door type and performance

Default* windows

Window ID	Window Description Max U-va	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum S	HGC*	tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-01 B	G.13	2900	2400	Sliding	45	ESE	None
BED 1	ATB-003-01 B	G.14	2800	600	Awning	60	SSW	None
BED 2	ATB-004-01 B	G.15	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-04 B	G.12	2900	6500	Sliding	45	ESE	None

~ . . ~ ~

.



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	Window Description			Maximum U-value*	^m Shgc	SHGC sub tolerance	SHGC substitution tolerance ranges	
		•				•	lower limit	upper limit	
None									
Custom* roo	f windows							SHGC sub	ostitution
Window ID	Wind	Window Description			Maximum U-value*	^m SHGC	* tolerance	tolerance ranges	
						e value		lower limit	upper limit
None									
Roof win	dow sch	hedule							
Location	Wine ID	dow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient ation	- Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type and	d performa	ANCE Skylight de	scription					
None				-					
Skylight	schedule	е							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffus	ser Shaft Refle	ctance
None									
External	door sc	hedule							
Location			Height	(mm)	Width (m	m) (Opening %	% Orier	ntation
None									
External	wall typ	е							
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	'PB	AFS 160mm	FCF/INS/PB		0.50		Medium	3.00	No
External	wall sch	nedule							
Location		Wall ID		Height (mm)	Width (mm)	Orien ation	it- Hori shao proj	izontal ding feature* ection (mm)	Vertical shading feature

2900

ESE

1333

2972

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes


External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	5451	SSW		Yes
BED 2	AFS 160/INS/PB	2900	2990	ESE		Yes
KLD	AFS 160/INS/PB	2900	6541	ESE		Yes
KLD	AFS 160/INS/PB	2900	1348	SSW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.7	0.00
INT-PB	Internal Plasterboard Stud Wall	51.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	N/A	2.50	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.7	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Coo	ling	system	

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım /	Assessed

		not	Willington	ASSESSED	
Туре	Fuel type	Water	efficiency /	daily load	
		CER Zone	STC	[litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-L18CKL-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type	
Conditioned*	72.0	Suburban	
Unconditioned*	4.2	NatHERS climate zone	
Total	76.2	56 - Mascot AMO	
Garage	0.0		



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	13.8	15.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-L18CKL-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-L18CKL-01 NatHERS Certificate



Certificate check	Approva	l stage	Construc stage	Nation For the Providence	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con surv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.0 Star Rating as of 10 Apr 2024



Certificate check	icate check Approval stage		Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging										
Does the dwelling meet the NCC requirement for thermal bridging?										
Insulation installation method										
Has the insulation been installed according to the NCC requirements?										
Building sealing										
Does the dwelling meet the NCC requirements for Building Sealing?										
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)						
Appliances										
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?										
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?										
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?										
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?										
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?										
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)								
Does the lighting meet the artificial lighting requirements specified in the NCC?										
Does the hot water system meet the additional requirements specified in the NCC?										
Provisional values* check										
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?										
Other NCC requirements										
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatic	also be sat	isfied ICC					



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.56
BED 1	Bedroom	16.48
BED 2	Bedroom	10.71
BATH	Unconditioned	4.20
ENS 1	Night Time	4.24

Window and glazed door type and performance

Default* windows

Window ID	Window Description		SHGC*	SHGC substitution tolerance ranges		
	U-va	U-value*		lower limit	upper limit	
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution _{C*} tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	G.18	2900	2400	Sliding	45	ESE	None
BED 2	ATB-004-01 B	G.17	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-02 B	G.16	2900	5300	Sliding	45	ESE	None



Roof window type and performance value

Default* roof windows

BED 1

Window ID	Wind	ow Description	I			Maximu	ım ⊥ SH	IGC*	SHGC sub tolerance	stitution ranges
		•				U-value*			lower limit	upper limit
None										
Custom* roo	f windows									atitution
Window ID	Wind	ow Description	l			Maximu	um SH	IGC*	tolerance	ranges
		•				U-value	•		lower limit	upper limit
None										
Roof win	dow scl	hedule								
Location	Win ID	dow	Window no.	Opening %	J Height (mm)	Width (mm)	Ori ati	ient- on	Outdoor shade	Indoor shade
None										
Skylight Skylight ID	type and	l performa	<i>NCE</i> Skylight de	scription						
None										
Skylight	schedul	е								
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Di	ffuser	Shaft Reflee	ctance
None										
External	door sc	hedule								
Location			Height	(mm)	Width (m	m)	Openir	ng %	Orien	tation
None										
External	wall typ	е								
Wall ID		Wall Type			Solar absor	rptance	Wall Colour	-	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/	PB	AFS 160mm I	FCF/INS/PB		0.50		Mediur	n	3.00	No
External	wall sch	nedule								
Location		Wall ID		Height (mm)	Width (mm)	Orier ation	nt- s	Horizo shadir projec	ontal ng feature* tion (mm)	Vertical shading feature

2900

ESE

1359

3881

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG04, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

AFS 160/INS/PB

Yes



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS 160/INS/PB	2900	2976	ESE		Yes
KLD	AFS 160/INS/PB	2900	5820	ESE		Yes
KLD	AFS 160/INS/PB	2900	1435	NNE	3728	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	73.4	0.00
INT-PB	Internal Plasterboard Stud Wall	46.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.15	Timber (12mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location Quan	intity L	Diameter (mm)
KLD 1	1	800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Coo	ling	system	

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	ım A	ssessed

		not	Willingth	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-736LAS-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG05, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	79.2	Suburban			
Unconditioned*	3.8	NatHERS climate zone			
Total	83.0	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.7	5.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-736LAS-01</u>. When using either link, ensure you are visiting

When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:









#HR-736LAS-01 NatHERS Certificate

8.5 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.5 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	balica kono, ufree
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	8.12
KLD	Kitchen/Living	36.90
STUDY	Day Time	4.20
BED 1	Bedroom	13.16
ENS 1	Night Time	3.75
BATH	Unconditioned	3.78
BED 2	Bedroom	13.05

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	·	U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51

Custom* windows

Window ID	Window Description	Maximum	SHGC*	tolerance ranges		
		U-value*		lower limit upper limit		
None						

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-004-02 B	G.23	1900	2400	Sliding	45	ESE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for BG05, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	G.22	1900	2400	Awning	45	ESE	None
KLD	ATB-004-03 B	G.19	2900	6000	Sliding	60	NNE	None
KLD	ATB-003-03 B	G.20	2800	3300	Awning	40	ESE	None
KLD	ATB-003-03 B	G.21	2800	1100	Awning	63	ESE	None

Roof window type and performance value

Default* roo	of windows										
Window ID	Windo	ow Descriptio	'n				Maximun	¹ SHGC*	tolerance ranges		
							U-value*		lower limit	upper limit	
None											
Custom* roo	of windows										
							Movimum		SHGC sub	ostitution	
Window ID	Winde	ow Descriptio	n				Waximum U-value*	U-value*	-value* SHGC*	lower limit	
None											
Roof wi	ndow sch	nedule									
Location	Wind ID	wob	Window no.	Openiı %	ng	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade	
None											
Skylight	: type and	l performa	ance								
Skylight ID		-	Skylight de	scriptior	า						
None											
Skylight	schedule	9									
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Or ati	ient- on	Outdoor shade	Diffuser	Shaft Refle	ctance	
None											
External	door sc	hedule									
Location			Height	(mm)	v	Vidth (mi	m) O	pening %	Orier	ntation	
None											



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE		Yes
BED 1	AFS 160/INS/PB	2900	1407	SSW	3833	Yes
BED 2	AFS 160/INS/PB	2900	3006	ESE		Yes
KLD	AFS 160/INS/PB	2900	6800	NNE	2729	Yes
KLD	AFS 160/INS/PB	2900	6495	ESE		Yes
KLD	AFS 160/INS/PB	2900	4133	WNW	2873	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	39.1	0.00
INT-PB	Internal Plasterboard Stud Wall	78.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2100

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	iel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	а				
Heating system					
				Minimum	Recommended
Туре	Location	Fu	iel Type	efficiency / performance	capacity
No Whole of Home Data	3				
Hot water system					
		Hot	Minimu	ım 🦯	Assessed
Туре	Fuel type	Water CER Zone	efficier STC	1Cy / 0	daily load [litres]
No Whole of Home Data	3				
Pool / spa equipment	t				
		Minimum		Recomm	ended
Туре	Fuel type	efficiency / performance		capacity	
No Whole of Home Data	a				
Onsite Renewa	able Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kV	vj
No Whole of Home Data	3				
Pottony achody	10				

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-OPSXLH-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BG06, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	72.9	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	77.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	9.1	11.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-OPSXLH-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BG06, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

ATHONWARE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate. 8.0 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		START ALTON STRONG
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ yor checked	er checked	ent authority/ yor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse surve	Builde	Conse surve	Occul
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.0 Star Rating as of 10 Apr 2024



Certificate check Approval stage		stage Construction stage			
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	44.38
BED 1	Bedroom	12.23
BATH	Unconditioned	4.22
BED 2	Bedroom	12.48
ENS 1	Night Time	3.78

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window Description	Maximum	SHGC*	SHGC sub	stitution ranges	
	· · · · · · · · · · · · · · · · · · ·	U-value*	•	lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	G.28	2600	2400	Awning	63	WNW	None
BED 2	ATB-004-01 B	G.27	2900	2200	Sliding	45	NNE	None
KLD	ATB-004-01 B	G.25	2700	1550	Fixed	0	NNW	None
KLD	ATB-004-01 B	G.26	2700	2103	Fixed	0	WNW	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-02 B	G.24	2900	4780	Sliding	60	NNE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit upper limit
None				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB-A	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No
AFS 160/INS/PB-B	AFS 160mm FCF/INS/PB	0.30	Light	3.00	No



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	0.50	Medium	0.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB-A	2900	3034	WNW		Yes
BED 1	AFS 160/INS/PB-A	2900	455	SSW		Yes
BED 2	AFS 200/INS/PB	2900	2576	WNW		Yes
BED 2	AFS 200/INS/PB	2900	839	NW		Yes
BED 2	AFS 160/INS/PB-A	2900	3248	NNE		Yes
ENS 1	AFS 160/INS/PB-B	2900	1519	WNW		Yes
KLD	AFS 160/INS/PB-A	2900	1568	NNW		Yes
KLD	AFS 160/INS/PB-A	2900	97	SSW		Yes
KLD	AFS 160/INS/PB-A	2900	2103	WNW	1988	Yes
KLD	AFS 160/INS/PB-A	2900	5416	NNE	2051	Yes
KLD	AFS 160/INS/PB-A	2900	282	WNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	59.2	0.00
INT-PB	Internal Plasterboard Stud Wall	41.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.1	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.15	Tile (8mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.3	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	44.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	I	⁻ uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
				Minimum	Recommended
Туре	Location	I	Fuel Type	efficiency / performance	capacity
No Whole of Home Data					
Hot water system					
_		Hot	Minim	um	Assessed
Туре	Fuel type	Water CER Zone	efficie STC	ncy /	daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
		Minimum		Recomm	hended
Туре	Fuel type	efficiency / performanc	e	capacity	
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generati	on Capacity [k\	N]
No Whole of Home Data					
Battery schedul	e				

 Type
 Storage Capacity [kWh]

 No Whole of Home Data
 Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-WN798X-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BLG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	3 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type		
Conditioned*	87.1	Suburban		
Unconditioned*	4.9	NatHERS climate zone		
Total	91.9	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	23.8	7.1
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-WN798X-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BLG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:


6.9 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	and a reason around	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ syor checked	er checked	sent authority/ syor checked	Ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BLG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.9 Star Rating as of 10 Apr 2024



Certificate check	Approva	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging						
Does the dwelling meet the NCC requirement for thermal bridging?						
Insulation installation method						
Has the insulation been installed according to the NCC requirements?						
Building sealing						
Does the dwelling meet the NCC requirements for Building Sealing?						
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)		
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?						
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)				
Does the lighting meet the artificial lighting requirements specified in the NCC?						
Does the hot water system meet the additional requirements specified in the NCC?						
Provisional values* check						
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?						
Other NCC requirements						
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.						

MATION WIDE HOLUSE

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	44.29
STUDY	Day Time	7.54
BED 1	Bedroom	18.28
ENS 1	Night Time	4.87
BED 2	Bedroom	12.09
BATH	Unconditioned	4.87

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	······	U-value*		lower limit	upper limit	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	low ID Window Description Maximum U-value*	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	LG.05	2800	1900	Sliding	45	WNW	None
BED 2	ATB-004-02 B	LG.04	2900	2400	Sliding	45	NNE	None
KLD	ATB-004-02 B	LG.03	2900	3000	Sliding	45	NNE	None
STUDY	ATB-004-02 B	LG.07	2900	2200	Sliding	45	NNE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
STUDY	ATB-004-02 B	LG.06	2900	2000	Sliding	45	WNW	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof win	dows					

Window ID	ID Window Description Maximur	Maximum SI	HGC*	SHGC substolerance r	stitution anges
	·······	U-value*		lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2202	WNW		Yes
BED 2	AFS 160/INS/PB	2900	3447	NNE	1916	Yes
BED 2	AFS 160/INS/PB	2900	3506	WNW		Yes
KLD	AFS 160/INS/PB	2900	3381	WNW		Yes
KLD	AFS 160/INS/PB	2900	3104	NNE	1178	Yes
KLD	AFS 160/INS/PB	2900	1562	NNW		Yes
STUDY	AFS 160/INS/PB	2900	2286	NNE	910	Yes
STUDY	AFS 160/INS/PB	2900	2236	WNW	1528	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	57.8	0.00
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	25.6	3.00
INT-PB	Internal Plasterboard Stud Wall	49.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.3	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	2.50	Timber (12mm)
BED 2	CSOG-200: Concrete Slab on Ground (200mm)	5.1	N/A	0.00	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	44.3	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-yaluo)	Reflective wrap*
		(R-value)	



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No



Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Heating system					
Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data	3				
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimi efficiei STC	um A ncy/d	Assessed laily load litres]
No Whole of Home Data	3				-
Pool / spa equipment	:	Minimum			
Туре	Fuel type	efficiency / performance		Recommo capacity	ended
No Whole of Home Data	3				
Onsite Renewa	able Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	ני
No Whole of Home Data	3				
Pattony schod	ulo				

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-PJ0VPS-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	BLG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	3 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	90.6	Suburban			
Unconditioned*	3.8	NatHERS climate zone			
Total	94.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	13.8	9.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-PJ0VPS-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BLG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATION WIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-PJ0VPS-01 NatHERS Certificate

7.7 Star Rating as of 10 Apr 202	ng as of 10 Apr 2	Apr 202
----------------------------------	-------------------	---------



Certificate check	check Approval stage Cons stage		Construc stage	onstruction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con surv	Build	Consurv	Occ
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BLG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.7 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Con stag		Construc stage	Construction stage	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method				·	
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.15
KLD	Kitchen/Living	42.06
BED 1	Bedroom	13.16
ENS 1	Night Time	3.75
BATH	Unconditioned	3.78
BED 2	Bedroom	13.05
STUDY	Day Time	7.38

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SF	HGC*	SHGC subs	stitution anges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	LG.12	2900	2400	Sliding	45	ESE	None
BED 2	ATB-004-02 B	LG.11	2900	2400	Sliding	45	ESE	None
KLD	ATB-004-02 B	LG.08	2900	6000	Sliding	45	NNE	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for BLG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-02 B	LG.09	2900	3300	Sliding	60	ESE	None
KLD	ATB-003-01 B	LG.10	2900	1000	Awning	60	ESE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
	-	U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ESE		Yes
BED 1	AFS 160/INS/PB	2900	1795	SSW	3777	Yes
BED 2	AFS 160/INS/PB	2900	3006	ESE		Yes
KLD	AFS 160/INS/PB	2900	6855	NNE	2729	Yes
KLD	AFS 160/INS/PB	2900	6495	ESE		Yes
KLD	AFS 160/INS/PB	2900	1897	WNW	1254	Yes
STUDY	AFS 160/INS/PB	2900	1999	ESE	1878	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	50.7	0.00
INT-PB	Internal Plasterboard Stud Wall	81.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	2.50	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.1	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.4	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Nene			

None



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENTRY/HALL	1	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for BLG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	im A	ssessed

		ΠΟΙ	Winnun	Assesseu	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-JOITOC-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	90.8	Suburban			
Unconditioned*	4.5	NatHERS climate zone			
Total	95.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	13.8	11.7		
Load limits	34	21		

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com

au/pdf/HR-JOITOC-01. When using either link, ensure you are visiting http://www.hero-software. com.au



NATIONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-JOITOC-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approval stage		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ wor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		-	-		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		todes for the streng
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.44
HALL	Day Time	3.64
BED 1	Bedroom	13.42
ENS 1	Night Time	4.68
BED 2	Bedroom	10.39
BED 3	Bedroom	12.17
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	ndow ID Window Description Maximum	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum SHO	SHGC substitution GC* tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-003-01 B	1.09	2800	2400	Awning	29	SSE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C101, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	1.08	2800	2400	Awning	29	SSE	None
BED 3	ATB-004-02 B	1.06	2900	3000	Sliding	45	WSW	None
BED 3	ATB-003-01 B	1.07	2800	1100	Awning	58	SSE	None
KLD	ATB-004-03 B	1.05	2800	600	Fixed	0	WSW	None
KLD	ATB-003-03 B	1.04	2800	2400	Awning	29	W	None
KLD	ATB-003-03 B	1.03	2800	2400	Awning	29	W	None
KLD	ATB-004-03 B	1.02	2900	3800	Sliding	45	NNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges
	······	U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance i	stitution ranges
Wildow ib Wildow beschption		U-value*	0.100	lower limit	upper limit
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2973	SSE	654	Yes
BED 2	AFS 160/INS/PB	2900	2996	SSE	651	Yes
BED 3	AFS 160/INS/PB	2900	3907	WSW	967	Yes
BED 3	AFS 160/INS/PB	2900	3052	SSE	623	Yes
KLD	AFS 160/INS/PB	2900	1456	WSW	1090	Yes
KLD	AFS 160/INS/PB	2900	6497	W	571	Yes
KLD	AFS 160/INS/PB	2900	3906	NNW	6727	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.5	0.00
INT-PB	Internal Plasterboard Stud Wall	76.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.5	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	ium A	ssessed
Туре		Fuel type	Water	efficie	ency/d	aily load
			CER Zone	STC	[1	litres]
No Whole of Home Data						
Pool / spa equipment						
			Minimur	m	Deceman	and a d

Recommended Туре Fuel type efficiency / capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]			
No Whole of Home Data					

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-VM0J70-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024		
Prepared by	Brewster Murray		

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	71.6 Suburban				
Unconditioned*	4.2	NatHERS climate zone			
Total	75.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.8	9.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-VM0J70-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C102, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-VM0J70-01 NatHERS Certificate

6.8 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approval stage Cons stage		Construc stage	tion	HOUSE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ wor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons surve	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check				1	
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor			'	'	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Construction stage			tion	Part and and
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging									
Does the dwelling meet the NCC requirement for thermal bridging?									
Insulation installation method									
Has the insulation been installed according to the NCC requirements?									
Building sealing									
Does the dwelling meet the NCC requirements for Building Sealing?									
Whole of Home performance check (not applicable if a Whole of Home assessment is not conducted)									
Appliances									
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?									
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?									
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?									
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?									
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?									
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)							
Does the lighting meet the artificial lighting requirements specified in the NCC?									
Does the hot water system meet the additional requirements specified in the NCC?									
Provisional values* check									
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?									
Other NCC requirements									
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC				



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	43.20
BED 1	Bedroom	12.54
ENS 1	Night Time	4.86
BED 2	Bedroom	11.04
BATH	Unconditioned	4.23

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID Window	Window Description	Maximum	SHGC*	tolerance ranges		
	·	U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.15	2900	2400	Awning	45	ENE	None
BED 2	ATB-003-01 B	1.14	2800	600	Awning	58	ENE	None
BED 2	ATB-004-02 B	1.13	2900	2400	Sliding	45	SSE	None
KLD	ATB-003-01 B	1.11	2800	2400	Awning	29	SSE	None
KLD	ATB-003-01 B	1.10	2800	2400	Awning	29	SSE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-02 B	1.12	2900	3500	Sliding	45	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						
Custom* roof wi	ndows					

Window ID Window Description L	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit upper limit	
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2987	ENE	451	No
BED 2	AFS 160/INS/PB	2900	3566	ENE	446	No
BED 2	AFS 160/INS/PB	2900	3079	SSE	3812	Yes
KLD	AFS 160/INS/PB	2900	6246	SSE	647	Yes
KLD	AFS 160/INS/PB	2900	3902	ENE	3193	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.8	0.00
INT-PB	Internal Plasterboard Stud Wall	43.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
News			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed

6.8 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			


Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		N4 : :		
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-J1Z8KN-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	85.2	Suburban			
Unconditioned*	5.1	NatHERS climate zone			
Total	90.3	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	3.1	9.8
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-J1Z8KN-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C103, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:









#HR-J1Z8KN-01 NatHERS Certificate

8.9 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE DUBLET AUTOC SCIENCE	

Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Builo	Cons surve	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> and <i>'Roof window type and performance</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor		·			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.9 Star Rating as of 10 Apr 2024



Penniture Penniture	Certificate check	Approval	stage	Construc stage	tion	
	Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessi	ment is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	equirements tate or territ	that must ory variatio	also be sat	isfied ICC

* Refer to glossary.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	57.18
BED 1	Bedroom	12.29
ENS 1	Night Time	4.64
BATH	Unconditioned	5.10
BED 3	Bedroom	11.11

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	1.19	1900	2400	Awning	45	ENE	None
BED 3	ATB-003-01 B	1.21	1900	2400	Awning	45	ENE	None
BED 3	ATB-004-04 B	1.20	2900	2150	Sliding	45	SSE	None
KLD	ATB-004-04 B	1.18	2900	4142	Sliding	45	ENE	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
KLD	ATB-004-02 B	1.17	2900	2150	Sliding	45	NNW	None
KLD	ATB-003-01 B	1.16	2900	3300	Awning	39	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
	-	U-value*	lower limit upper limit		
None					
Custom* roof v	vindows				
Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ENE	502	No
BED 3	AFS 160/INS/PB	2900	2997	ENE	370	No
BED 3	AFS 160/INS/PB	2900	2279	SSE	4269	Yes
BED 3	AFS 160/INS/PB	2900	255	SSE		Yes
BED 3	AFS 160/INS/PB	2900	234	ENE		Yes
KLD	AFS 160/INS/PB	2900	4431	ENE	2488	Yes
KLD	AFS 160/INS/PB	2900	2467	NNW	4246	Yes
KLD	AFS 160/INS/PB	2900	4267	ENE	486	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	84.2	0.00
INT-PB	Internal Plasterboard Stud Wall	38.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	57.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling *penetrations**

Location	Quantity	Туре	Type Diameter (mm)	
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 × 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

8.9 Star Rating as of 10 Apr 2024



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	ım 4	Assessed

Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity	
------	-----------	--	-------------------------	--

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-Y1M4NV-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	5 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024		
Prepared by	Brewster Murray		

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	83.9	Suburban		
Unconditioned*	4.9	NatHERS climate zone		
Total	88.8	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	22.3	11.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-Y1M4NV-01</u>. When using either link, ensure you are visiting http://www.hero-software.





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:





Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

6.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage Consta		Construction stage		Galica Rennic Alfred
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	15.43
KLD	Kitchen/Living	33.07
BED 1	Bedroom	18.60
ENS 1	Night Time	6.18
BED 2	Bedroom	10.66
BATH	Unconditioned	4.91

Window and glazed door type and performance

Default* windows

Window ID	Nindow ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·····	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-01 B	1.29	970	850	Fixed	0	W	None
BED 1	ATB-003-01 B	1.27	2800	600	Awning	58	W	None
BED 1	ATB-004-02 B	1.26	2900	2400	Sliding	45	Ν	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C104, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	1.30	2900	2400	Awning	45	W	None
ENS 1	ATB-004-01 B	1.28	970	1810	Fixed	0	W	None
KLD	ATB-004-02 B	1.22	2900	4000	Sliding	60	NNW	None
KLD	ATB-003-01 B	1.23	2800	2400	Awning	29	ENE	None
KLD	ATB-003-01 B	1.24	2800	2400	Awning	29	ENE	None
KLD	ATB-003-01 B	1.25	2800	1100	Awning	58	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID V	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
			•	lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	0.50	Medium	0.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS 160/INS/PB	2900	1671	W	617	No
BED 1	AFS 160/INS/PB	2900	4712	W	539	No
BED 1	AFS 160/INS/PB	2900	2759	Ν	4062	Yes
BED 2	AFS 160/INS/PB	2900	3588	W	551	No
BED 2	AFS 160/INS/PB	2900	1084	S		Yes
ENS 1	AFS 160/INS/PB	2900	2030	W	585	No
ENTRY/HALL	AFS 200/INS/PB	2900	1757	SSE		Yes
KLD	AFS 160/INS/PB	2900	4010	NNW	3837	Yes
KLD	AFS 160/INS/PB	2900	8267	ENE	495	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	35.2	0.00
INT-PB	Internal Plasterboard Stud Wall	68.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.15	Tile (8mm)
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	2.50	Tile (8mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.6	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	2.50	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.15	Timber (12mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.3	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
Ceiling fans				
Location		Quantity	Diameter	(mm)



Ceiling fans

Location	Quantity	Diameter (mm)			
KLD	1	2100			
Roof type					

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficier STC	im / ncy/ c	Assessed daily load litres]
No Whole of Home Data					-
Pool / spa equipment		Minimum			
Туре	Fuel type	efficiency / performance)	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	/]
No Whole of Home Data					



Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS® Certificate No. #HR-KNA6K4-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
LOT/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type				
Conditioned*	90.7	Suburban				
Unconditioned*	4.5	NatHERS climate zone				
Total	95.3	56 - Mascot AMO				
Garage	0.0					



ccredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	13.6	11.0
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-KNA6K4-01. When using either link.

ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



7.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check			·		
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.6 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method			·	·	·
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.44
HALL	Day Time	3.64
BED 1	Bedroom	13.42
ENS 1	Night Time	4.68
BED 2	Bedroom	10.39
BED 3	Bedroom	12.17
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·	U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges
		U-value*		lower limit upper limit
None				

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BED 1	ATB-003-01 B	2.09	2800	2400	Awning	29	SSE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C201, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-01 B	2.08	2800	2400	Awning	29	SSE	None
BED 3	ATB-004-02 B	2.06	2900	3000	Sliding	45	WSW	None
BED 3	ATB-003-01 B	2.07	2800	1100	Awning	58	SSE	None
KLD	ATB-003-03 B	2.05	2800	600	Fixed	0	WSW	None
KLD	ATB-003-03 B	2.04	2800	2400	Awning	29	W	None
KLD	ATB-003-03 B	2.03	2800	2400	Awning	29	W	None
KLD	ATB-004-03 B	2.02	2900	3800	Sliding	45	NNW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								





External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2973	SSE	654	Yes
BED 2	AFS 160/INS/PB	2900	2996	SSE	651	Yes
BED 3	AFS 160/INS/PB	2900	3907	WSW	967	Yes
BED 3	AFS 160/INS/PB	2900	3052	SSE	623	Yes
KLD	AFS 160/INS/PB	2900	1456	WSW	1090	Yes
KLD	AFS 160/INS/PB	2900	6497	W	571	Yes
KLD	AFS 160/INS/PB	2900	3906	NNW	6727	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.5	0.00
INT-PB	Internal Plasterboard Stud Wall	76.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
--------------	----------------------------------	----------------------	-------------

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fu	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	Fue	el Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
Туре	Fuel type	Hot Water	Minim efficier	um ncy /	Assessed daily load
No Whole of Home Data		CER Zone	510		liitresj
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performance		Recom capacity	nended Y
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [k	wj

No Whole of Home Data

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-NV291Q-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C202, 116-120 Frenchs Forest Rd ,
	FIERCIS FOIESI, INSVV, 2000
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	71.6	Suburban		
Unconditioned*	4.2	NatHERS climate zone		
Total	75.9	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.9	9.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-NV291Q-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





#HR-NV291Q-01 NatHERS Certificate

6.8 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construction stage		tion	UNECTATION CONTRACTOR
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Con surv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling penetrations</i> ' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C202, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
6.8 Star Rating as of 10 Apr 2024



Certificate check	ficate check Approval stage		Construc stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	·		·	·	·
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	43.20
BED 1	Bedroom	12.54
ENS 1	Night Time	4.86
BED 2	Bedroom	11.04
BATH	Unconditioned	4.23

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC subs	stitution anges
	·	U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.15	1900	2400	Awning	45	ENE	None
BED 2	ATB-003-01 B	2.14	2800	600	Awning	58	ENE	None
BED 2	ATB-004-02 B	2.13	2900	2400	Sliding	45	SSE	None
KLD	ATB-003-01 B	2.11	2800	2400	Awning	29	SSE	None
KLD	ATB-003-01 B	2.10	2800	2400	Awning	29	SSE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-004-02 B	2.12	2900	3480	Sliding	45	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance r	Ibstitution e ranges		
		U-value*		lower limit	upper limit		
None							
Custom* roof wi	ndows						

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	
None									

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2987	ENE	451	No
BED 2	AFS 160/INS/PB	2900	3566	ENE	446	No
BED 2	AFS 160/INS/PB	2900	3079	SSE	3811	Yes
KLD	AFS 160/INS/PB	2900	6246	SSE	647	Yes
KLD	AFS 160/INS/PB	2900	3902	ENE	3193	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.8	0.00
INT-PB	Internal Plasterboard Stud Wall	43.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)	
None			

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

....



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-TV7G7Q-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024		
Prepared by	Brewster Murray		

Construction and environment

Assessed floor area (m²)*		Exposure Type		
Conditioned*	67.8	Suburban		
Unconditioned*	4.9	NatHERS climate zone		
Total	72.7	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	1.7	10.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-TV7G7Q-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:





Certificate check	Approval stage		Construction stage		endeci konoli, si lanne
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	r checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

9.0 Star Rating as of 10 Apr 2024



Certificate check	cate check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging												
Does the dwelling meet the NCC requirement for thermal bridging?												
Insulation installation method												
Has the insulation been installed according to the NCC requirements?												
Building sealing												
Does the dwelling meet the NCC requirements for Building Sealing?												
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)								
Appliances												
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?												
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?												
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)										
Does the lighting meet the artificial lighting requirements specified in the NCC?												
Does the hot water system meet the additional requirements specified in the NCC?												
Provisional values* check												
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?												
Other NCC requirements												
Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.												



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.94
BED 1	Bedroom	12.29
ENS 1	Night Time	4.64
BED 2	Bedroom	9.90
BATH	Unconditioned	4.93

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC sub tolerance	ostitution ranges
		U-value*	•	lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.18	1900	2400	Awning	45	ENE	None
BED 2	ATB-004-02 B	2.19	2900	3000	Sliding	45	ENE	None
KLD	ATB-006-03 B	2.17	2900	2400	Sliding	45	NNW	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-005-03 B	2.16	2800	3300	Awning	39	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHC	SHGC substitution GC* tolerance ranges
		U-value*	lower limit upper limit
None			
Custom* roof v	vindows		

Window ID Window Description Maximum U-value* SHGC* SHGC substitution tolerance ranges None None SHGC* SHGC*</td

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS 160/INS/PB	2900	2997	ENE	502	No
BED 2	AFS 160/INS/PB	2900	3522	ENE	2511	Yes
KLD	AFS 160/INS/PB	2900	739	ENE	2483	Yes
KLD	AFS 160/INS/PB	2900	2467	NNW	4246	Yes
KLD	AFS 160/INS/PB	2900	4267	ENE	486	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	68.2	0.00
INT-PB	Internal Plasterboard Stud Wall	44.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
•			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
					Minimum	
Туре	Location			Fuel Type	efficiency / performance	Recommended
No Whole of Home Data						
Hot water system						
			Hot	Minim	um	Assessed
Туре		Fuel type	Water	efficie	ncy /	daily load
			CER Zone	STC		[litres]

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C203, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment				
Туре	Fuel type	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		
No whole of home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-4XKKJI-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C204, 116-120 Frenchs Forest Rd , Frenchs Forest NSW 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	6 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	101.3	Suburban			
Unconditioned*	4.9	NatHERS climate zone			
Total	106.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.4	13.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-4XKKJI-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

NATIONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-4XKKJI-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approval stage		Construc stage	Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ veyor checked	der checked	sent authority/ veyor checked	supancy/other
It is not mandatory to complete this checklist.	Ass	Con	Buil	Con	000
Genuine certificate check			1		
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor		·	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		val stage Construction stage		DARC AURIC CROE
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	tisfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	12.32
KLD	Kitchen/Living	33.82
STUDY	Day Time	7.62
BED 1	Bedroom	18.60
ENS 1	Night Time	6.18
BED 2	Bedroom	10.66
BED 3	Bedroom	12.08
BATH	Unconditioned	4.91

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
		U-value*		lower limit	upper limit
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit

None

Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
BATH	ATB-004-01 B	2.28	970	850	Fixed	0	W	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	2.26	2800	600	Awning	58	W	None
BED 1	ATB-004-02 B	2.25	2900	2400	Sliding	45	Ν	None
BED 2	ATB-003-01 B	2.29	2900	2400	Awning	45	W	None
BED 3	ATB-003-01 B	2.24	1900	2400	Awning	45	ENE	None
ENS 1	ATB-004-01 B	2.27	970	1810	Fixed	0	W	None
KLD	ATB-004-02 B	2.20	2900	4000	Sliding	60	NNW	None
KLD	ATB-003-01 B	2.21	2800	2400	Awning	29	ENE	None
KLD	ATB-003-01 B	2.22	2800	2400	Awning	29	ENE	None
KLD	ATB-003-01 B	2.23	2800	1100	Awning	58	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
				lower limit upper limit
None				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	
Skylight schedule	

Location	Skylight Skylight Skylight shaft Area Orient- Outdoor	Outdoor	Diffusor	Shaft				
Location	ID	No.	length (mm)	(m²)	ation	shade	Diffuser	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C204, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS 160/INS/PB	AFS 160mm FCF/INS/PB	0.50	Medium	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS 160/INS/PB	2900	1671	W	617	Yes
BED 1	AFS 160/INS/PB	2900	4712	W	539	Yes
BED 1	AFS 160/INS/PB	2900	2759	Ν	4062	Yes
BED 2	AFS 160/INS/PB	2900	3588	W	551	No
BED 2	AFS 160/INS/PB	2900	1084	S		Yes
BED 3	AFS 160/INS/PB	2900	2983	ENE	389	No
BED 3	AFS 160/INS/PB	2900	2528	SSE	4274	Yes
ENS 1	AFS 160/INS/PB	2900	2030	W	585	Yes
KLD	AFS 160/INS/PB	2900	4010	NNW	3837	Yes
KLD	AFS 160/INS/PB	2900	8441	ENE	490	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	23.2	0.00
INT-PB	Internal Plasterboard Stud Wall	100.4	0.00



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.6	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Type Diameter (mm)	
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2100

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 × 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				

Туре	Loca	tion	Fu	iel Type	Minimum efficiency / performance	Recommended capacity
------	------	------	----	----------	--	----------------------

No Whole of Home Data

Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]	
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency /	Re	commended	

Type Fuel type efficiency / capacity capacity



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-1P8879-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	90.7	Open
Unconditioned*	4.5	NatHERS climate zone
Total	95.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	15.7	9.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-1P8879-01</u>. When using either link, ensure you are visiting http://www.hero-software.



NATIONWIDE HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:

Cost:







#HR-1P8879-01 NatHERS Certificate

7.4 Star Rating as of 10 Apr 2024

	1
NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construction stage		HOUSE HARCY KATAL WORK
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Consurv	Build	Con surv	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	·		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C301, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Deally Address Social
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	tisfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	46.44
HALL	Day Time	3.64
BED 1	Bedroom	13.42
ENS 1	Night Time	4.68
BED 2	Bedroom	10.39
BED 3	Bedroom	12.17
BATH	Unconditioned	4.55

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-005-03 B	3.09	2800	2400	Awning	29	SSE	None
BED 2	ATB-005-03 B	3.08	2800	2400	Awning	29	SSE	None
BED 3	ATB-006-03 B	3.06	2900	2400	Sliding	45	WSW	None



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 3	ATB-005-03 B	3.07	2800	1100	Awning	29	SSE	None
KLD	ATB-005-03 B	3.05	2800	600	Awning	58	WSW	None
KLD	ATB-005-03 B	3.04	2800	2400	Awning	29	W	None
KLD	ATB-005-03 B	3.03	2800	2400	Awning	29	W	None
KLD	ATB-006-03 B	3.02	2900	3800	Sliding	45	NNW	None

Roof window type and performance value

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper lir	mit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2973	SSE	662	Yes
BED 2	AFS MC 160/INS/PB	2900	2996	SSE	659	Yes
BED 3	AFS MC 160/INS/PB	2900	3907	WSW	975	Yes
BED 3	AFS MC 160/INS/PB	2900	3052	SSE	631	Yes
KLD	AFS MC 160/INS/PB	2900	1456	WSW	1098	Yes
KLD	AFS MC 160/INS/PB	2900	6497	W	579	Yes
KLD	AFS MC 160/INS/PB	2900	3906	NNW	6735	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	41.5	0.00
INT-PB	Internal Plasterboard Stud Wall	76.4	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.15	Tile (8mm)
HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.4	N/A	0.15	Timber (12mm)



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
HALL	1	Downlight	190	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	1800

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium


Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				-	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficier STC	um ncy /	Assessed daily load [litres]
No Whole of Home Data					
Pool / spa equipment					
Туре	Fuel type	Minimum efficiency / performanc	e	Recomm capacity	lended
No Whole of Home Data		· ·			
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	V]
No Whole of Home Data					

Battery schedule

Туре	Storage Capacity [kWh]
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-C24L9N-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C302, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	71.6	Open
Unconditioned*	4.2	NatHERS climate zone
Total	75.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	14.2	6.7
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-C24L9N-01</u>. When using either link, ensure you are visiting http://www.hero-software.



NATIONWIDE HOUSE HINK

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





Generated on 10 Apr 2024 using Hero 4.0 for C302, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

#HR-C24L9N-01 NatHERS Certificate

8.0 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approva	stage	Construc stage	Television and	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ syor checked	pancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons surve	Builde	Cons surve	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.0 Star Rating as of 10 Apr 2024



Certificate check	Approva	l stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
	/ /· / / /· // // // // // // // // // /				

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the <i>'Appliance schedule'</i> on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	43.20
BED 1	Bedroom	12.54
ENS 1	Night Time	4.86
BED 2	Bedroom	11.04
BATH	Unconditioned	4.23

Window and glazed door type and performance

Default* windows

Window ID	Vindow ID Window Description Maximum	Maximum U-value*	Maximum	Maximum	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit			
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46			
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54			

Custom* windows

Window ID Window Description	Maximum	SHGC*	SHGC sub	stitution ranges	
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-005-03 B	3.15	1900	2400	Awning	45	ENE	None
BED 2	ATB-005-03 B	3.14	2800	600	Awning	58	ENE	None
BED 2	ATB-006-03 B	3.13	2900	2400	Sliding	45	SSE	None
KLD	ATB-005-03 B	3.11	2800	2400	Awning	29	SSE	None
KLD	ATB-005-03 B	3.10	2800	2400	Awning	29	SSE	None



Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*
KLD	ATB-006-03 B	3.12	2900	3480	Sliding	45	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance r	stitution anges
	······	U-value*		lower limit	upper limit
None					
Custom* roof win	dows				

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges
				lower limit upper limit
None				

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2987	ENE	459	No
BED 2	AFS MC 160/INS/PB	2900	3566	ENE	454	No
BED 2	AFS MC 160/INS/PB	2900	3079	SSE	3819	Yes
KLD	AFS MC 160/INS/PB	2900	6246	SSE	655	Yes
KLD	AFS MC 160/INS/PB	2900	3902	ENE	3201	Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	53.8	0.00
INT-PB	Internal Plasterboard Stud Wall	43.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed

8.0 Star Rating as of 10 Apr 2024



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

8.0 Star Rating as of 10 Apr 2024



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	Im (hasasad

		HOT	MINIMUM	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Type No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-WYOO1J-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	67.8	Open
Unconditioned*	4.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	6.0	8.5
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-WYOO1J-01</u>. When using either link, ensure you are visiting http://www.hero-software. com.au



HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





8.7 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	int authority/ or checked	r checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse surve)	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

8.7 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		proval stage Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	sment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	40.94
BED 1	Bedroom	12.29
ENS 1	Night Time	4.64
BED 2	Bedroom	9.90
BATH	Unconditioned	4.93

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	AI Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges		
		U-value*	lower limit upper limit		
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-01 B	3.18	1900	2400	Awning	45	ENE	None
BED 2	ATB-004-02 B	3.19	2900	3000	Sliding	45	ENE	None
KLD	ATB-004-02 B	3.17	2900	2400	Sliding	45	NNW	None
KLD	ATB-003-01 B	3.16	2800	3300	Awning	39	ENE	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C303, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Roof window type and performance value

Default* roof windows

Window ID	Wind	low Description	I			Maximur	n SHGC*	SHGC sub tolerance i	stitution ranges
		· · · ·				U-value*		lower limit	upper limit
None									
Custom* roo	f windows								
Window ID	Wind	low Description				Maximur	n SHGC*	SHGC sub tolerance i	stitution ranges
	W inc					U-value*	01100	lower limit	upper limit
None									
Roof win	dow sc	hedule							
Location	Wir ID	ndow	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight Skylight ID	type an	d performa	<i>NCC</i> Skylight de	scription					
None			, ,	•					
Skylight	schedu	le							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflec	ctance
None									
External	door so	chedule	Hoight	(mm)	Width (m	m) (Doping %	Orion	tation
None			neight	()	Width (iii		penng /	Onen	lation
Extornal	wall tyr								
External	wan typ				Color		Voll	Bulk	Reflective
Wall ID		Wall Type			absor	ptance C	olour	insulation (R-value)	wall wrap*
AFS MC 160/	INS/PB	AFS 160mm I	CF/INS/PB Meta	al Cladded	0.73	D (1)ark Monument)	3.00	No
External	wall sci	hedule					Haria	ntal	Vortical

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS MC 160/INS/PB	2900	2997	ENE	510	No



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	AFS MC 160/INS/PB	2900	3522	ENE	2519	Yes
KLD	AFS MC 160/INS/PB	2900	739	ENE	2491	Yes
KLD	AFS MC 160/INS/PB	2900	2467	NNW	4254	Yes
KLD	AFS MC 160/INS/PB	2900	4267	ENE	494	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	68.2	0.00
INT-PB	Internal Plasterboard Stud Wall	44.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	1	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Hom	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system					
		Hot	Minim	um A	Assessed
Туре	Fuel type	Water	efficie	ncy/ c	laily load
		CER Zone	STC]	litres]

No Whole of Home Data

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

AFRC Australius Accessed floor the or area motiles in the software for the purpose of the NHERRS assessment. Note, this may not be consistent with the floor area in the design documents. Celling penetrations features that require a ponetration to be celling, including downlights, vents, othmast fans, range hoods, includes futures attached to the celling with small beact invogith e celling for witing, a celling fars, genetral tights, and heating and cooling based Conditioned a zone within a dewilling that is expected to require heating and cooling based on standard occupancy assumptions. In some dirumstances it will include garages. Cotactom windows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. Default vindows windows listed in AHERRS othware that are available on the market in Australia and have a WERS (Window Energy Raing Scheme) rating. ERE Energy villes The is yout homes rating without coloring can be achieved by an air conditioner for a single WM of electricity input Entrance door Base sonthy windikating and point o totas to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category exposed terrain with numerous, doally gatod olbutchone balow flow in g, subarban houring, heavity wegataled building asset. Exposure category or porticed terrain with numerous, doally gatod obstanctions arestoftee onthous and asset and thous for a subarban flow in g, sub	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Celling penetrations celling with the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned a row with a software for the purpose of the NaHERS assessment. Note, this may not be consident with the floor area in the design documents. Conditioned a row with a software for the calling for withs, e.g. calling fairs; pendent lights, and heating and cooling docts. Conditioned conservation of withon Software for the require heating and cooling based on standard occupancy assumptions. In some circumstances it will include gatages. COP Coefficient of performance Coefficient of performance Energy value The and cost to social product dar vice growther a five regure heating without colar or stations. Energy value The and cost to social product dar vice growther and may networks (as defined in the ABCB Housing Pervision Station NaHERS assessment and software and must not be modeled as a door when opening to a minimally vertilated corridor in a Class 2 building. Exposure see exposure categories below a minimal hight e.g. grassmark with few well statistical methods. Exposure category - sopent terrain with moderations at a similar binding te.g. grassmark with few well statistical methods. a minimality vertilated corridor in a Class 2 building.	AFRC	Australian Fenestration Rating Council
Caling penetrations Returns that require a penetration the ceiling, including downlights, renks, and heating and cooling douts. Conditioned a zone within a dwelling that is expected to require heating and cooling douts. COP Coefficient of performance Custom windows lated in ANHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AnHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows fated in AntHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy value The ret cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). Exposure category - sogced terrain with no dostinuctors a g. fat grazing land, cosan-fortiage, desert, exposed high-rise unit (usually above 10 foors). <	Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Conditioned a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. COP Coefficient of performance Costam windows windows listed in MaHCES software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are moresentating on those software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Energy use This is your Thomas rating without solar or battines. Energy value The net cost to sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no cost sociely including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - sposed terrain with no costancions as a larg stang land, cocan-frontage, desert, acposed high-rise unit (usually above 10 foors). Exposure category - sposed terrain with numerous, closely spaced distructions below 10m ag, gausultan housing, heavity wegatted builting environments. terrain with numerous, closely spaced distructions ag, a spassandard with for wealt costant is a constantial abading feature. Optional shading feature provisional value terrain with numerous, closely spaced distructions	Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP Coefficient of performance Custom windows windows listed in NatHERS softwares that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERRY Energy Efficiency Ratio. measure of how much cooling can be actived by an air conditioner for a single KWh of electricity input Energy use This is your hornes rating without Soft or batteries. Energy value The net cost to society incluting, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - seposed terrain with invo obstructions a g a limitar height a.g. grassing desart, exposed high rise unit (usually above 10 floors). Exposure category - sope terrain with no obstructions at a similar height a.g. grassing swith flow well scattered obstructions below 10m. g. shouthan housing, heavily vegetated bushind ords, elevated units (a.g. above 3 floors). Exposure category - sope terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. Exposure category - protected terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics terrain with numerous, closely spaced distructions soure 10m e.g. dyna in dustrial areas. National Gesture torics	Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows windows listed in NaHERS software that are available on the market in Austalia and have WERS (Window Energy Rating Scheme) rating. Default windows windows flat are representable of a specific type of window product and windows properties have been derived by statistical methods. ERF Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input Energy value This is your homes rating without solar or battives. Energy value The net cost to solar without solar or battives. Energy value The sea signity ventilation benefits in the modeling software and must not be modeled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed ternain with mode bottructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with modebructions e ag. flat grazing land, cocan-frontage, desert, exposed high-rise unit (susual) above 10 floors). Exposure category - suburban ternain with mounds the control on the equitable above 10 me ag. obly and industrial and marks. Exposure category - suburban ternain with mounds to a bached distructions over 10 me ag. obly and industrial areas. Exposure category - suburban ternain with mounds of the back diverted on the sate and the exposure and taboxed (to back diverted on the down and the pass) representage or openable proces	COP	Coefficient of performance
Default windows windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. ERR Energy Efficiency Ratio, messure of how much cooling can be achieved by an ir conditioner for a single kWh of electricity input Energy value The is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Exposure category - exposed See exposure categories below Exposure category - exposed ternain with no obstructions e g, fat grazing land, ocean fontage, desert, exposed high-rise unit (usually above 10 floos). Exposure category - exposed ternain with no exposure or alloy as a similar height e g, grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered wells and obstructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and the scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and term the noticinal scattered bestructions below 10m, farmland with scattered sheds, lightly vegetated bush how and terma with numerous, dosely spaced obstructions cent 0 me g, city and industrial areas.	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
EER Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input. Energy value This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - propen terrain with no vebtructions at a similar height e.g. grasslands with flew well scattered obstructions below 10m, farmiland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandarbs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation c	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Energy use This is your homes rating without solar or batteries. Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - spored terrain with no obstructions e.g. fill grazing land. coean-frontage, desart, exposed high-rise unit (usually above 10 floors). Exposure category - sporeted terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 building. Definitions can be found at www abcb group. Provisional value an assumed value that does or tore regrestion and use. The value for example, if the vali colour is unpecified in the doomentation. a provisional value of medium Provisional value the costapoly or size of equipment that is recommended toor windows that is	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy value The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). Entrance door these signify vertilation benefits in the modeling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, coen-frontage, desert, exposed obstructions below 10m, farmathan the sattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upper levels. National Construction Code terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional value a horizontal plane, e.g. exves. varandhis, peoglas, carports, or overhangs or balconies from upp	Energy use	This is your homes rating without solar or batteries.
Entrance door these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. Exposure category - exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - suburban terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 m.f. armind with scattered abds, lightly vegetated bush locks, elevated units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush and areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m.e.g. ob (and industrial areas.) Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandshs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NOC groups buildings by thri function and use, for example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value? Opening percentage the openability percentage or openabile (moveabile) area of doors or windows that is used in ventilation calculations. Provisional value Recommended capacity the is the capacity or size of equipment that is recommended by NatiFERS to acheve the desired confort confilons in the zone or zones se	Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Exposure see exposure category - exposed terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. fat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no obstructions e.g. above 3 floors). Exposure category - protected terrain with numerous, dosely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, dosely spaced obstructions over 10 m e.g. city and industrial areas. National Construction Code Class 10a buildings. Definitions can be found at www.abeto.av.av. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value a sasumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of "mediun" must be modeled. Acceptable provisional values are outline in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended tap as attrached by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a teramination and the final selection sizing shoul	Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed terrain with no obstructions e.g. flat grazing land, coean-frontage, desert, exposed high-rise unit (usually above 10 floors). Exposure category - open terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with no most units (e.g. above 3 floors). Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Provisional Construction Code the NCC groups buildings. Behindings can be found at www.abc.gov.au. National Construction Code the NCC groups buildings. Definitions can be found at www.abc.gov.au. National Value a home that achieves a net zero energy value*. Provisional value an assume and value value. For example, if the wall colour is unspecified in the documatation a, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NAIHERS Technical Note and can be found at www.nathers.gov.au Reflective wrap (atso known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NAIHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a di	Exposure	see exposure categories below
Exposure category - open therain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 31 foors). Exposure category - protected terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Provisoinal shafing feature provides shafing to the building in the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NCC groups buildings to the horizontal plane, e.g. evers, verandahs, pergolas, carports, or overhangs or balconies from upper levels. Net zero home a home that achives a net zero energy vulle". Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed that doelwes an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium' must be modelied. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by MatHERS to achiver the desired comfort conditions in the zone or zones serviced. This is a recommended to path the final selection sing should be confirmed by a suilably qualified person. Reflective wrap (also known as foil) can be apiplied to walls, roofs and cellings. When combined with an appro	Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - suburban terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas. Exposure category - protected terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www abch gov au. Net zero home a home that achives a net zero energy value ⁴ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actua value. For example, if the wall colson is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined with an appropriate airgap and emissivity value, it provides insulative properties. Reflective wrap (also known as foil) corb a puppled to walls. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower	Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - protected terrain with numerous, closely spaced obstructions over 10 me e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the Norizontal shading feature provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code (NCC) Class the NorC Corputs buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value ¹ . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be coapacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, rofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, an	Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Horizontal shading feature provides shading to the building in the horizontal plane, e.g. eavex, verandahs, pergolas, carports, or overhangs or balconies from upper levels. National Construction Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident sola	Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
National Construction Code (NCC) Class the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached (NCC) Class Net zero home a home that achieves a net zero energy value ² . Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, bot directry transmitted a	Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
Net zero home a home that achieves a net zero energy value*. Opening percentage the openability percentage or operable (moveable) area of door or windows that is used in ventilation calculations. Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level. <	National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.auRecommended capacitythis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.Reflective wrap (also known as foil)can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Stylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-	Net zero home	a home that achieves a net zero energy value*.
Provisional value an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Teachical Note and can be found at www.nathers.gov.au Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates, certificates created by the REC registry for renewable energy technologies that may be	Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof light) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater	Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. Roof window for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves. Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require hea	Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Roof windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryU-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Shading featuresincludes neighbouring buildings, fences, and wing walls, but excludes eaves.Solar heat gain coefficient (SHGC)the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.Skylight (also known as roof lights)for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading feature	Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 must must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 0.2 that must separate the insulating ability. U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in t	Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCsSmall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy RegulatoryThermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Thermal breaksare materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.U-valuethe rate of heat transfer through a window. The lower the U-value, the better the insulating ability.Unconditioneda zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptionsVertical shading featuresprovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).Window shading devicea device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
	Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-CCCRDH-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	7 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	101.3	Open			
Unconditioned*	4.9	NatHERS climate zone			
Total	106.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.1	11.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-CCCRDH-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOU

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:





7.8 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	ent authority/ /or checked	er checked	ent authority/ /or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builde	Conse surve)	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule</i> ' tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.8 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	12.32
KLD	Kitchen/Living	33.82
STUDY	Day Time	7.62
BED 1	Bedroom	18.60
ENS 1	Night Time	6.18
BED 2	Bedroom	10.66
BED 3	Bedroom	12.10
BATH	Unconditioned	4.91

Window and glazed door type and performance

Default* windows

Window ID	ndow ID Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-005-03 B	Al Thermally Broken A DG Argon Fill High Solar Gain low-E - Clear	2.91	0.44	0.42	0.46	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID	Window Description	Maximum SHG	SHGC substitution
		U-value*	lower limit upper limit
None			
Window a	nd glazed door schedule		

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	ID	no.	(mm)	(mm)	type	%	ation	device*

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-01 B	3.28	970	850	Fixed	0	W	None
BED 1	ATB-005-03 B	3.26	2800	600	Awning	58	W	None
BED 1	ATB-006-03 B	3.25	2900	2400	Sliding	45	Ν	None
BED 2	ATB-003-01 B	3.29	2900	2400	Awning	45	W	None
BED 3	ATB-003-01 B	3.24	1900	2400	Awning	45	ENE	None
ENS 1	ATB-004-01 B	3.27	970	1810	Fixed	0	W	None
KLD	ATB-006-03 B	3.20	2900	4000	Sliding	60	NNW	None
KLD	ATB-005-03 B	3.21	2800	2400	Awning	29	ENE	None
KLD	ATB-005-03 B	3.22	2800	2400	Awning	29	ENE	None
KLD	ATB-005-03 B	3.23	2800	1100	Awning	58	ENE	None

Roof window type and performance value

Default* roof windows SHGC substitution Maximum tolerance ranges SHGC* Window ID Window Description U-value* lower limit upper limit None **Custom* roof windows** SHGC substitution Maximum tolerance ranges SHGC* Window ID Window Description U-value* lower limit upper limit None **Roof window** schedule Window Window Opening Height Width Outdoor Indoor **Orient-**Location ID % ation no. (mm) (mm) shade shade

None

Skylight type and performance

Skylight ID	Skylight description
None	

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

HOUSE

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance	

None

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1671	W	625	Yes
BED 1	AFS MC 160/INS/PB	2900	4712	W	547	Yes
BED 1	AFS MC 160/INS/PB	2900	2759	Ν	4070	Yes
BED 2	AFS MC 160/INS/PB	2900	3588	W	559	Yes
BED 2	AFS MC 160/INS/PB	2900	1084	S		Yes
BED 3	AFS MC 160/INS/PB	2900	2988	ENE	385	No
BED 3	AFS MC 160/INS/PB	2900	2533	SSE	4279	Yes
ENS 1	AFS MC 160/INS/PB	2900	2030	W	593	Yes
KLD	AFS MC 160/INS/PB	2900	4010	NNW	3845	Yes
KLD	AFS MC 160/INS/PB	2900	8441	ENE	498	No

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	23.2	0.00
INT-PB	Internal Plasterboard Stud Wall	100.4	0.00

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C304, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.6	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.15	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
STUDY	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	3	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Ceiling	90 x 36	900	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	Data			



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC		Assessed daily load [litres]	
No Whole of Home Data						
Pool / spa equipment						
Туре	Fuel type	Minimum efficiency / performance		Recomi capacit	mended Y	
No Whole of Home Data						

Onsite Renewable Energy *schedule*

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		
No whole of home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-K0ZOFF-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	102.6	Open
Unconditioned*	4.2	NatHERS climate zone
Total	106.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	14.0	10.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-K0ZOFF-01. When using either link,





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:







#HR-K0ZOFF-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage Construction stage		tion			
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	er checked	sent authority/ syor checked	Ipancy/other		
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu		
Genuine certificate check							
Does this Certificate match the one available at the web address or QR code verification link on the front page?							
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?							
Thermal performance check							
Windows and glazed doors							
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?							
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?							
External walls							
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?							
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?							
Floor							
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?							
Ceiling penetrations*							
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?							
Ceiling							
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?							
Roof							
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?							
Apartment entrance doors (NCC Class 2 assessments only)							
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.							
Exposure*							
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".							
Heating and cooling load limits*							
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?							
7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	55.40
BED 1	Bedroom	16.93
ENS 1	Night Time	4.85
BED 2	Bedroom	14.74
BED 3	Bedroom	10.72
BATH	Unconditioned	4.18

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	4.07-B	2800	1200	Fixed	0	ENE	None
BED 1	ATB-003-03 B	4.07-A	2800	1200	Awning	58	ENE	None
BED 2	ATB-004-04 B	4.06-B	2800	1200	Fixed	0	ENE	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-03 B	4.06-A	2800	1200	Awning	58	ENE	None
BED 2	ATB-004-04 B	4.05	970	2410	Fixed	0	SSE	None
BED 3	ATB-003-03 B	4.08-A	1900	1200	Awning	58	ENE	None
BED 3	ATB-004-04 B	4.08-B	1900	1200	Fixed	0	ENE	None
KLD	ATB-004-04 B	4.04	970	2410	Fixed	0	SSE	None
KLD	ATB-004-03 B	4.03	2800	6000	Sliding	60	WSW	None
KLD	ATB-004-03 B	4.02	2800	1600	Sliding	22	WSW	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHGC	SHGC substitution tolerance ranges		
	·······	U-value*	lower limit upper limit		
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



Location	Height (mm)	Width (mm)	Opening %	Orientation					

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1526	NNW		Yes
BED 1	AFS MC 160/INS/PB	2900	2993	ENE		Yes
BED 2	AFS MC 160/INS/PB	2900	3499	ENE		Yes
BED 2	AFS MC 160/INS/PB	2900	6261	SSE		Yes
BED 3	AFS MC 160/INS/PB	2900	2984	NNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3583	ENE		Yes
KLD	AFS MC 160/INS/PB	2900	4960	SSE		Yes
KLD	AFS MC 160/INS/PB	2900	9291	WSW	1908	Yes
KLD	AFS MC 160/INS/PB	2900	3629	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	8.5	0.00
INT-PB	Internal Plasterboard Stud Wall	76.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.15	Tile (8mm)

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C401, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	55.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	8	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
	· · · · · · · · · · · · · · · · · · ·		

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Heating system						
Туре	Location			Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data						
Hot water system						
			Hot	Minim	ium A	ssessed
Туре		Fuel type	Water	efficie	ency/ d	aily load
			CER Zone	STC	- [itres]
No Whole of Home Data						
Pool / spa equipment						
			Minimur	m	Decement	un al a al

Recommended Туре Fuel type efficiency / capacity performance

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Туре	Storage Capacity [kWh]	
No Whole of Home Data		

No Whole of Home Data



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-CXSL8D-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	8 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024			
Prepared by	Brewster Murray			

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	98.9	Open			
Unconditioned*	5.0	NatHERS climate zone			
Total	103.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1			
State/Territory variation	Yes			

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	12.4	12.4
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-CXSL8D-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



No Whole of Home performance assessment conducted for this certificate.

Cost:



#HR-CXSL8D-01 NatHERS Certificate

7.5 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approva	l stage	Construction stage		INSECTION CONTRACTOR
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	isent authority/ /eyor checked	der checked	isent authority/ /eyor checked	upancy/other
It is not mandatory to complete this checklist.	Ass	Cor	Buil	Cor sur	000
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		'	'		
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

7.5 Star Rating as of 10 Apr 2024



Certificate check	Approval stage			Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other	

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC

energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.78
KLD	Kitchen/Living	41.75
BED 1	Bedroom	16.49
ENS 1	Night Time	5.34
BED 2	Bedroom	10.73
BED 3	Bedroom	12.76
BATH	Unconditioned	5.00

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges
		U-value*		lower limit upper limit

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-03 B	4.18-A	1900	1200	Awning	58	ENE	None
BED 1	ATB-004-04 B	4.18-B	1900	1200	Fixed	0	ENE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	4.15	2800	1800	Sliding	45	ENE	None
BED 3	ATB-004-04 B	4.13	970	2410	Fixed	0	ENE	None
BED 3	ATB-004-03 B	4.14	2800	1800	Sliding	45	SSE	None
KLD	ATB-004-03 B	4.11	2800	4800	Sliding	45	NNW	None
KLD	ATB-004-04 B	4.12	970	2410	Fixed	0	ENE	None
KLD	ATB-004-04 B	4.10-B	2800	1200	Fixed	0	W	None
KLD	ATB-003-03 B	4.09-A	2800	800	Awning	58	W	None
KLD	ATB-003-03 B	4.10-A	2800	1200	Awning	58	W	None
KLD	ATB-004-03 B	4.09-B	2800	800	Fixed	0	W	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit
None					

Custom* roof windows

Window ID Window Description	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*	•	lower limit upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	
Skylight schedule	

Location	Skylight	Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffusor	Shaft
Location	ID	No.	length (mm)	(m²)	ation	shade	Dillusei	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1575	ENE	2971	Yes
BED 1	AFS MC 160/INS/PB	2900	3578	ENE		Yes
BED 1	AFS MC 160/INS/PB	2900	4281	SSE		Yes
BED 2	AFS MC 160/INS/PB	2900	2203	ENE	2986	Yes
BED 3	AFS MC 160/INS/PB	2900	3758	ENE		No
BED 3	AFS MC 160/INS/PB	2900	2727	SSE	3276	Yes
ENS 1	AFS MC 160/INS/PB	2900	1672	ENE		Yes
ENTRY/HALL	AFS MC 160/INS/PB	2900	2013	W		Yes
ENTRY/HALL	AFS MC 160/INS/PB	2900	1267	WSW		Yes
KLD	AFS MC 160/INS/PB	2900	5801	NNW	2561	Yes
KLD	AFS MC 160/INS/PB	2900	4723	ENE		No
KLD	AFS MC 160/INS/PB	2900	7008	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	31.1	0.00



Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.1	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.15	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	2.50	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.15	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.6	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location			Fuel Type)	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data								
Heating system								
Туре	Location			Fuel Type)	Minimum efficiency / performance		Recommended capacity
No Whole of Home Data								
Hot water system								
			Hot	Min	nimur	n /	Ass	essed
Туре		Fuel type	Water	effi	cienc	cy/ o	daily	y load
			CER Zone	STO	C	I	[litre	es]
No Whole of Home Data								

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C402, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-XQIEG5-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	102.6	Open
Unconditioned*	4.2	NatHERS climate zone
Total	106.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	20.3	13.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-XQIEG5-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

ATTONWER HOUSE

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

- Yes
- No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-XQIEG5-01 NatHERS Certificate

6.4 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE	

Certificate check	Approva	l stage	Construc stage	tion	Sold of Low California	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	ent authority/ syor checked	er checked	ent authority/ wor checked	pancy/other	
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons surve	Occu	
Genuine certificate check						
Does this Certificate match the one available at the web address or QR code verification link on the front page?						
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?						
Thermal performance check		<u>'</u>				
Windows and glazed doors						
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?						
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?						
External walls						
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?						
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?						
Floor		·	·			
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?						
Ceiling penetrations*						
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?						
Ceiling						
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?						
Roof						
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?						
Apartment entrance doors (NCC Class 2 assessments only)						
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.						
Exposure*						
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".						
Heating and cooling load limits*						
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?						

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construction stage		Partice Burling of Joint
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	55.41
BED 1	Bedroom	16.93
ENS 1	Night Time	4.85
BED 2	Bedroom	14.74
BED 3	Bedroom	10.72
BATH	Unconditioned	4.18

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
		U-value*		lower limit	upper limit
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	5.07-B	2800	1200	Fixed	0	ENE	None
BED 1	ATB-003-03 B	5.07-A	2800	1200	Awning	58	ENE	None
BED 2	ATB-004-04 B	5.06-B	2800	1200	Fixed	0	ENE	None

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C501, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-003-03 B	5.06-A	2800	1200	Awning	58	ENE	None
BED 2	ATB-004-04 B	5.05	970	2410	Fixed	0	SSE	None
BED 3	ATB-003-03 B	5.08-B	1900	1200	Awning	58	ENE	None
BED 3	ATB-004-04 B	5.08-A	1900	1200	Fixed	0	ENE	None
KLD	ATB-004-04 B	5.04	970	2410	Fixed	0	SSE	None
KLD	ATB-004-03 B	5.03	2800	6000	Sliding	60	WSW	None
KLD	ATB-004-03 B	5.02	2800	1600	Sliding	22	WSW	None

Roof window type and performance value

Default* roof windows

Window ID Window Description	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25	

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	1500	900	SSE	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1526	NNW		Yes
BED 1	AFS MC 160/INS/PB	2900	2993	ENE		Yes
BED 2	AFS MC 160/INS/PB	2900	3499	ENE		Yes
BED 2	AFS MC 160/INS/PB	2900	6261	SSE		Yes
BED 3	AFS MC 160/INS/PB	2900	2984	NNW		Yes
BED 3	AFS MC 160/INS/PB	2900	3583	ENE		Yes
KLD	AFS MC 160/INS/PB	2900	4960	SSE		Yes
KLD	AFS MC 160/INS/PB	2900	9291	WSW	1908	Yes
KLD	AFS MC 160/INS/PB	2900	3629	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	8.8	0.00
INT-PB	Internal Plasterboard Stud Wall	76.9	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.15	Tile (8mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.9	N/A	0.15	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.15	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.15	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	55.4	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	8	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
KLD	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

No Whole of Home Data					
Туре	Fuel type	Minimum efficiency performar	/ nce	Recomme capacity	ended
Pool / spa equipment					
No Whole of Home Data					
		CER Zone	STC	[1	itres]
Туре	Fuel type	Hot Water	Minim efficie	um A ncy/ d	assessed aily load
Hot water system					
No Whole of Home Data					
Туре	Location		Fuel Type	efficiency / performance	Recommended capacity
Heating system				Minimum	
No Whole of Home Data					
Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity

Orientatation



Onsite Renewable Energy *schedule*

Type No Whole of Home Data Generation Capacity [kW]

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-EXTVP0-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	9 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type			
Conditioned*	98.9	Open			
Unconditioned*	5.0	NatHERS climate zone			
Total	103.9	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	20.0	14.2
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-EXTVP0-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



#HR-EXTVP0-01 NatHERS Certificate

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approva	Approval stage		Construction stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occi
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor			·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	·	·	·	·	·
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	tisfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
ENTRY/HALL	Day Time	11.78
KLD	Kitchen/Living	41.75
BED 1	Bedroom	16.49
ENS 1	Night Time	5.34
BED 2	Bedroom	10.73
BED 3	Bedroom	12.76
BATH	Unconditioned	5.00

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges		
	·	U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E - Clear	3.10	0.49	0.47	0.51	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID	Window ID Window Description Ma	Maximum	SHGC*	SHGC sub	stitution ranges
		U-value*	0.100	lower limit	upper limit

None

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-003-03 B	5.18-A	1900	1200	Awning	58	ENE	None
BED 1	ATB-004-04 B	5.18-B	1900	1200	Fixed	0	ENE	None

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 2	ATB-004-03 B	5.15	2800	1800	Sliding	45	ENE	None
BED 3	ATB-004-04 B	5.13	970	2410	Fixed	0	ENE	None
BED 3	ATB-004-03 B	5.14	2800	1800	Sliding	45	SSE	None
KLD	ATB-004-03 B	5.11	2800	4800	Sliding	45	NNW	None
KLD	ATB-004-04 B	5.12	970	2410	Fixed	0	ENE	None
KLD	ATB-004-04 B	5.10-B	2800	1200	Fixed	0	W	None
KLD	ATB-004-03 B	5.09-B	2800	800	Fixed	0	W	None
KLD	ATB-003-03 B	5.10-A	2800	1200	Awning	58	W	None
KLD	ATB-003-03 B	5.09-A	2800	800	Awning	58	W	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	stitution ranges
		U-value*		lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum	SHGC*	SHGC sub tolerance	estitution ranges
		U-value*		lower limit	upper limit
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
KLD	VEL-011-02 W	SK	0	900	1500	SW	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight	Skylight	Skylight shaft	Area	Orient-	Outdoor	Diffusor	Shaft
Location	ID	No.	length (mm)	(m²)	ation	shade	Diffuser	Reflectance

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

6.4 Star Rating as of 10 Apr 2024



Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS MC 160/INS/PB	AFS 160mm FCF/INS/PB Metal Cladded	0.73	Dark (Monument)	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS MC 160/INS/PB	2900	1575	ENE	2971	Yes
BED 1	AFS MC 160/INS/PB	2900	3578	ENE		Yes
BED 1	AFS MC 160/INS/PB	2900	4281	SSE		Yes
BED 2	AFS MC 160/INS/PB	2900	2203	ENE	2986	Yes
BED 3	AFS MC 160/INS/PB	2900	3758	ENE		No
BED 3	AFS MC 160/INS/PB	2900	2727	SSE	3276	Yes
ENS 1	AFS MC 160/INS/PB	2900	1672	ENE		Yes
ENTRY/HALL	AFS MC 160/INS/PB	2900	2013	W		Yes
ENTRY/HALL	AFS MC 160/INS/PB	2900	1267	WSW		Yes
KLD	AFS MC 160/INS/PB	2900	5801	NNW	2561	Yes
KLD	AFS MC 160/INS/PB	2900	4723	ENE		No
KLD	AFS MC 160/INS/PB	2900	7008	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	31.4	0.00


Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.1	0.00

Floor type

BATHSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.0N/A0.15Tile (8mm)BED 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below16.5N/A0.15Timber (12mm)BED 2SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below10.7N/A0.15Timber (12mm)BED 3SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below12.8N/A0.15Timber (12mm)ENS 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.3N/A0.15Timber (12mm)ENS 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.3N/A0.15Timber (12mm)ENTRY/HALLSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below11.8N/A0.15Timber (12mm)KLDSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below41.8N/A0.15Timber (12mm)	Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below16.5N/A0.15Timber (12mm)BED 2SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below10.7N/A0.15Timber (12mm)BED 3SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below12.8N/A0.15Timber (12mm)BEN 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.3N/A0.15Timber (12mm)ENS 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below11.8N/A0.15Timber 	BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.15	Tile (8mm)
BED 2SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below10.7N/A0.15Timber (12mm)BED 3SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below12.8N/A0.15Timber 	BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.15	Timber (12mm)
BED 3SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below12.8N/A0.15Timber (12mm)ENS 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.3N/A0.15Tile (8mm)ENTRY/HALLSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below11.8N/A0.15Timber (12mm)KLDSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below41.8N/A0.15Timber 	BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.15	Timber (12mm)
ENS 1SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below5.3N/A0.15Tile (8mm)ENTRY/HALLSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below11.8N/A0.15Timber (12mm)KLDSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below41.8N/A0.15Timber (12mm)	BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.15	Timber (12mm)
ENTRY/HALLSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below11.8N/A0.15Timber (12mm)KLDSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below41.8N/A0.15Timber (12mm)	ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.15	Tile (8mm)
KLDSUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below41.8N/A0.15Timber (12mm)	ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.15	Timber (12mm)
	KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.8	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
BED 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENS 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
ENTRY/HALL	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed



Ceiling *penetrations**

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BED 1	2	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY/HALL	2	Downlight	190	Sealed
ENTRY/HALL	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions	Frame spacing	Steel thickness	Thermal Break
	(height x width, mm)	(mm)	(BMT mm)	(R-value)
Wall	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for C502, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Heating system

Туре	Location		Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minim	um	معمعمط

		HOT	winimum	Assessed	
Туре	Fuel type	Water CER Zone	efficiency / STC	daily load [litres]	
No Whole of Home Data					

Pool / spa equipment

Туре	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy schedule

Туре	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Storage Capacity [kWh]

Battery schedule

Туре	
No Whole of Home Data	



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-6P33M7-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	CG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m ²)*		Exposure Type		
Conditioned* 109	109.0	Suburban		
Unconditioned*	5.3	NatHERS climate zone		
Total	114.3	56 - Mascot AMO		
Garage	0.0			



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	16.1	11.9
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

com.au

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com</u> <u>au/pdf/HR-6P33M7-01</u>. When using either link, ensure you are visiting http://www.hero-software.



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for CG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:

Cost:



No Whole of Home performance assessment conducted for this certificate.

#HR-6P33M7-01 NatHERS Certificate

7.2 Star Rating as of 10 Apr 2024

NATIONWIDE HOUSE

Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	ssor checked	sent authority/ eyor checked	ler checked	sent authority/ eyor checked	upancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asse	Cons	Build	Cons	Occu
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor		·		·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.2 Star Rating as of 10 Apr 2024



Certificate check	tificate check Approval stage		Construc stage	todes for the streng	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	ted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A	dditional re	quirements	that must	also be sat	isfied

include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	47.29
BED 3	Bedroom	12.17
BATH	Unconditioned	5.28
ENTRY	Day Time	7.60
BED 1	Bedroom	16.06
ENS 1	Night Time	4.74
BED 2	Bedroom	15.08
STUDY	Day Time	6.06

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
ATB-003-01 B	Al Thermally Broken A DG Air Fill Clear-Clear	3.60	0.47	0.45	0.49	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-02 B	AI Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.90	0.51	0.48	0.54	

Custom* windows

Window ID	Window Description	Maximum SHGC*	SHGC substitution tolerance ranges	
		U-value*	lower limit upper limit	
None				

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for CG01, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-04 B	G.08	2900	2400	Sliding	45	SSE	None
BED 2	ATB-004-04 B	G.07	2900	2400	Sliding	45	SSE	None
BED 3	ATB-004-02 B	G.05	1300	3000	Sliding	45	WSW	None
BED 3	ATB-003-01 B	G.05	2900	1100	Awning	60	SSE	None
KLD	ATB-006-03 B	G.04	600	850	Fixed	0	WSW	None
KLD	ATB-006-03 B	G.03	2900	4800	Sliding	45	W	None
KLD	ATB-006-03 B	G.02	2900	3800	Sliding	45	NNW	None
STUDY	ATB-003-03 B	G.06	2900	1100	Awning	60	SSE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit	upper limit	
None						

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges		
				lower limit upper lim	it	
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS SC 160/INS/PB1-A	AFS 160mm FCF/INS/PB Stone Cladded	0.44	Medium (Shale Grey)	3.00	No
AFS SC 160/INS/PB1-B	AFS 160mm FCF/INS/PB Stone Cladded	0.30	Light	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS SC 160/INS/PB1-B	2900	2994	SSE		Yes
BED 2	AFS SC 160/INS/PB1-B	2900	2980	SSE		Yes
BED 3	AFS SC 160/INS/PB1-A	2900	3907	WSW	949	Yes
BED 3	AFS SC 160/INS/PB1-A	2900	3052	SSE		Yes
KLD	AFS SC 160/INS/PB1-A	2900	1456	WSW	1072	Yes
KLD	AFS SC 160/INS/PB1-A	2900	6497	W		Yes
KLD	AFS SC 160/INS/PB1-A	2900	3906	NNW	4585	Yes
STUDY	AFS SC 160/INS/PB1-B	2900	1956	SSE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	48.0	0.00
INT-PB	Internal Plasterboard Stud Wall	96.7	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	2.50	Timber (12mm)





Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	2.50	Exposed
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	2.50	Timber (12mm)
BED 3	CSOG-200: Concrete Slab on Ground (200mm)	7.3	N/A	0.00	Timber (12mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	0.15	Timber (12mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	2.50	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	47.3	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	2.50	Timber (12mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	1	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
ENTRY	1	Downlight	190	Sealed
ENTRY	1	Exhaust Fan	350	Sealed
KLD	7	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
STUDY	1	Downlight	190	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)	
KLD	1	1800	
Roof type			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Hot water system		Hot	Minimu	m	Account
Туре	Fuel type	Water CER Zone	efficier STC	ncy/ c	assessed daily load litres]
No Whole of Home Data				•	•
Pool / spa equipment		Minimum			
Туре	Fuel type	efficiency / performance)	Recomm capacity	ended
No Whole of Home Data					
Onsite Renewa	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW	/]
No Whole of Home Data					



Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-SQYTK0-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	CG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor area (m²)*		Exposure Type			
Conditioned*	112.0	Suburban			
Unconditioned*	4.2	NatHERS climate zone			
Total	116.2	56 - Mascot AMO			
Garage	0.0				



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	12.4	17.3
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com au/pdf/HR-SQYTK0-01. When using either link, ensure you are visiting http://www.hero-software. com.au





About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:



Greenhouse gas emissions:



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for CG02, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	essor checked	sent authority/ eyor checked	der checked	sent authority/ eyor checked	upancy/other
It is not mandatory to complete this checklist.	Asse	Con surv	Build	Con surv	Occ
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>External wall type table</i> ' on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor		·	·	·	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

7.0 Star Rating as of 10 Apr 2024



Certificate check	ificate check Approval stage		Construction stage		
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	ERS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	45.89
BED 1	Bedroom	25.38
BED 2	Bedroom	12.61
ENS 1	Night Time	4.97
BATH	Unconditioned	4.21
STUDY	Day Time	7.74
ENTRY/HALL	Day Time	9.60
LDRY	Day Time	5.80

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum SHGC*		SHGC substitution tolerance ranges		
		U-value*		lower limit	upper limit	
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E - Clear	3.10	0.39	0.37	0.41	
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57	
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32	
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28	

Custom* windows

Window ID Win	Window Description	Maximum	GC*	SHGC substitution tolerance ranges		
	·	U-value*		lower limit	upper limit	
None						
Window a	nd glazed door schedule					

ID no. (mm) (mm) type % ation device	Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
	Location	ID	no.	(mm)	(mm)	type	%	ation	device*



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BED 1	ATB-004-02 B	G.15	2900	4000	Sliding	45	ENE	None
BED 2	ATB-004-04 B	G.14	2900	2400	Sliding	45	ENE	None
KLD	ATB-004-01 B	G.09	2900	4110	Sliding	45	SSE	None
KLD	ATB-004-01 B	G.10	2900	3500	Sliding	45	ENE	None
KLD	ATB-004-04 B	G.12	2900	2400	Sliding	45	ENE	None
KLD	ATB-004-04 B	G.11	2900	2400	Sliding	45	SSE	None
STUDY	ATB-003-03 B	G.13	2800	1100	Awning	60	ENE	None

Roof window type and performance value

Default* roof windows

Window ID	Window Description	Maximum SHG	SHGC substitution tolerance ranges
	U-value*	U-value*	lower limit upper limit
None			

Custom* roof windows

Window ID	Window Description	Maximum U-value* SHGC	SHGC*	SHGC substitution tolerance ranges		
	U-value*		lower limit	upper limit		
None						

Roof window schedule

Location	Window	Window	Opening	Height	Width	Orient-	Outdoor	Indoor
	ID	no.	%	(mm)	(mm)	ation	shade	shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
None								



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation

None

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AFS SC 160/INS/PB1-A	AFS 160mm FCF/INS/PB Stone Cladded	0.44	Medium (Shale Grey)	3.00	No
AFS SC 160/INS/PB1-B	AFS 160mm FCF/INS/PB Stone Cladded	0.30	Light	3.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	AFS SC 160/INS/PB1-A	2900	4186	ENE		Yes
BED 1	AFS SC 160/INS/PB1-A	2900	2510	NNW	4235	Yes
BED 2	AFS SC 160/INS/PB1-B	2900	3986	ENE		Yes
KLD	AFS SC 160/INS/PB1-A	2900	4176	SSE		Yes
KLD	AFS SC 160/INS/PB1-A	2900	3902	ENE	3175	Yes
KLD	AFS SC 160/INS/PB1-B	2900	3374	ENE		Yes
KLD	AFS SC 160/INS/PB1-B	2900	3192	SSE		Yes
STUDY	AFS SC 160/INS/PB1-B	2900	2465	ENE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	62.3	0.00
INT-PB	Internal Plasterboard Stud Wall	96.3	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	2.50	Tile (8mm)



Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.4	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	2.50	Tile (8mm)
ENS 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	2.50	Tile (8mm)
ENTRY/HALL	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.9	N/A	2.50	Timber (12mm)
LDRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	2.50	Tile (8mm)
STUDY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	2.50	Timber (12mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

None

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	190	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 1	1	Exhaust Fan	260	Sealed
BED 1	4	Downlight	190	Sealed
ENS 1	1	Downlight	190	Sealed
ENS 1	1	Exhaust Fan	350	Sealed
KLD	6	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
LDRY	1	Downlight	190	Sealed
LDRY	1	Exhaust Fan	350	Sealed
Ceiling fans				

9.000			
Location	Quantity	Diameter (mm)	



Ceiling fans

Location	Quantity	Diameter (mm)	
None			

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
News			

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data					
Heating system					
Туре	Location	F	uel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				•	
Hot water system					
Туре	Fuel type	Hot Water CER Zone	Minimu efficien STC	ım A ıcy/d []	ssessed aily load itresl
No Whole of Home Data				•	
Pool / spa equipment		Minimum			
Туре	Fuel type	efficiency / performance	9	Recomme capacity	ended
No Whole of Home Data					
Onsite Renewal	ble Energy schedule				
Туре	Orientatation		Generatio	on Capacity [kW]
No Whole of Home Data					

NATIONWIDE HERENE

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. #HR-WJD6B5-01

Generated on 10 Apr 2024 using Hero 4.0 (Chenath v3.23)

Property

Address	CG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086
Lot/DP	1-2-3/213608-24/25713
NCC Class*	2
Floor/all Floors	4 of 1 floors
Туре	New

Plans

Main Plan	23_6514/-12.03.2024
Prepared by	Brewster Murray

Construction and environment

Assessed floor a	rea (m²)*	Exposure Type
Conditioned*	62.2	Suburban
Unconditioned*	11.5	NatHERS climate zone
Total	73.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 1
State/Territory variation	Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	8.8	8.6
Load limits	34	21

Features determining load limits

Floor type	
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	Ν
Outdoor living area	Ν
Outdoor living area ceiling fan	Ν

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com. au/pdf/HR-WJD6B5-01. When using either link, ensure you are visiting http://www.hero-software. com.au



* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for CG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating and Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG - Concrete Slab on Ground SF - Suspended Floor (or a mixture of CSOG and SF) NA - Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA - Not Applicable

Outdoor living area:

Yes

No

NA - Not Applicable

Outdoor living area ceiling fan:

Yes

No

NA - Not Applicable

Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

Energy use:





Cost:



8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval stage		Construc stage	tion	SURL'AUTO, E DUB
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	sor checked	nt authority/ or checked	r checked	nt authority/ or checked	ancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Asses	Conse survey	Builder	Conse survey	Occup
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check			·		
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>'Window and glazed door</i> <i>schedule'</i> and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>'Window and glazed door type and performance'</i> and <i>'Roof window type and performance'</i> tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'External wall type table'</i> on this Certificate?					
Does the external wall shade (colour) match what is shown in the ' <i>External wall type</i> ' table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Ceiling type'</i> table on this Certifi cate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?					

* Refer to glossary. Generated on 10 Apr 2024 using Hero 4.0 for CG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086

8.4 Star Rating as of 10 Apr 2024



Certificate check	Approval	stage	Construc stage	tion	
Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home	e assessr	nent is no	ot conduc	cted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the NatHE	RS asses	ssment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. A include, but are not limited to: condensation, structural and fire safety requirements energy efficiency requirements.	dditional re and any st	quirements ate or territ	that must ory variatio	also be sat ons to the N	isfied ICC



Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place.

North Pointer shown on the plans has been calculated to be the True North. If these are not in place then this Nathers must be revised.

Room schedule

Room	Zone Type	Area (m²)
KLD	Kitchen/Living	38.10
BATH	Unconditioned	6.12
BED 1	Bedroom	11.34
BED 2	Bedroom	12.81
BATH	Unconditioned	5.40

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ATB-004-01 B	Al Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57
ATB-004-02 B	Al Thermally Broken B DG Air Fill Tint-Clear	3.60	0.30	0.28	0.32
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E - Clear	3.10	0.27	0.26	0.28

Custom* windows

Window ID	Window Description	Maximum SHO	GC* tolerance ranges
		U-value*	lower limit upper limit
None			

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
BATH	ATB-004-01 B	G.18	970	900	Fixed	0	ENE	None
BED 1	ATB-004-04 B	G.17	2900	2400	Sliding	45	ENE	None
BED 2	ATB-004-04 B	G.19	2900	3000	Sliding	45	ENE	None
KLD	ATB-004-02 B	G.16	2900	4200	Sliding	45	W	None

~ . . ~ ~

.



Roof window type and performance value

Default* roof windows

Window ID Window		ow Description			Maximun	1 SHGC*	SHGC substitution tolerance ranges		
						U-value*	Unico	lower limit	upper limit
None									
Custom* roof	windows							SHGC sub	stitution
Window ID	Windo	ow Description	1			Maximun	¹ SHGC*	tolerance	ranges
						0-value		lower limit	upper limit
None									
Roof wind	dow sch	nedule							
Location	Winc ID	low	Window no.	Opening %	g Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
None									
Skylight <i>t</i> Skylight ID None	type and	l performa	<i>NCC</i> Skylight de	scription					
Skylight a	schedule	è							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflec	ctance
None									
External o	door scl	hedule	Height	: (mm)	Width (mi	m) O	pening %	Orien	tation
None						-			
External v	wall type	9							
Wall ID		Wall Type			Solar absor	W ptance C	/all olour	Bulk insulation (R-value)	Reflective wall wrap*
AFS SC 160/IN	IS/PB1	AFS 160mm I	FCF/INS/PB Ston	e Cladded	0.44	M (S G	edium Shale rey)	3.00	No
External v	wall sch	edule					Li a si	ntol	Voution
1 4				Height	Width	Orient	- HORIZO	nilai	vertical

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	shading feature* projection (mm)	shading feature
BATH	AFS SC 160/INS/PB1	2900	1687	ENE		Yes

* Refer to glossary.

Generated on 10 Apr 2024 using Hero 4.0 for CG03, 116-120 Frenchs Forest Rd , Frenchs Forest, NSW, 2086



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	AFS SC 160/INS/PB1	2900	2545	SSE	4235	Yes
BED 1	AFS SC 160/INS/PB1	2900	3178	ENE		Yes
BED 1	AFS SC 160/INS/PB1	2900	1461	NNW		Yes
BED 2	AFS SC 160/INS/PB1	2900	4351	ENE		Yes
KLD	AFS SC 160/INS/PB1	2900	5852	NNW		Yes
KLD	AFS SC 160/INS/PB1	2900	5454	W		Yes
KLD	AFS SC 160/INS/PB1	2900	311	SSE		Yes

Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
AFS 200/INS/PB	AFS 200mm FCF/INS/PB	45.1	0.00
INT-PB	Internal Plasterboard Stud Wall	42.8	0.00

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
ВАТН	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	2.50	Tile (8mm)
BED 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	2.50	Timber (12mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.0	N/A	2.50	Timber (12mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.15	Timber (12mm)

Ceiling type

Location	Construction			Bulk insulatio (R-value	Reflective on wrap*)
None					
Ceiling penetrations*					
Location		Quantity	Туре	Diameter (mm)	Sealed /unsealed



Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
BATH	2	Downlight	190	Sealed
BATH	3	Exhaust Fan	350	Sealed
BED 1	1	Downlight	190	Sealed
BED 2	2	Downlight	190	Sealed
KLD	5	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
KLD	1	2700

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

None

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions (height x width, mm)	Frame spacing (mm)	Steel thickness (BMT mm)	Thermal Break (R-value)
Wall	90 x 40	600	0.75	No
Floor	90 x 40	600	0.75	No

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Cooling system

Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	e Data			
Heating system				
Туре	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home	Data			



Hot water system

Туре	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				
Pool / spa equipment		Nf :::::::::::::::::::::::::::::::::::		
Туре	Fuel type	efficiency / performance		Recommended capacity
No Whole of Home Data				

Onsite Renewable Energy schedule

Туре	Orientatation	on Generation Capacity [kW]	
No Whole of Home Data			

Battery schedule

Type No Whole of Home Data Storage Capacity [kWh]



Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

Glossary

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
COP	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure	see exposure categories below
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small- scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)