

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 6ER1X2M6P0

Generated on 19 Nov 2023 using FirstRate5: 5.5.3a (3.22)

Property

Address 1, 12B John Street Avalon,
Avalon, NSW, 2107
Lot/DP 1/DP1237357
NCC Class* Class 1a
Floor/all Floors
Type New Home

Plans

Main plan Issue J 28/3/2023
Prepared by THW Architects

Construction and environment

Assessed floor area [m²]*	Exposure type
Conditioned* 182.2	suburban
Unconditioned* 11.3	NatHERS climate zone
Total 193.5	56 Mascot AMO
Garage -	



Accredited assessor

Name Jennifer Edwards
Business name LivSmart Solutions
Email contact@livsmartsolutions.com.au
Phone 0414405009
Accreditation No. DMN/17/1795
Assessor Accrediting Organisation
Design Matters National
Declaration of interest No

NCC Requirements

NCC provisions Volume 2
State/Territory variation Yes

National Construction Code (NCC) requirements

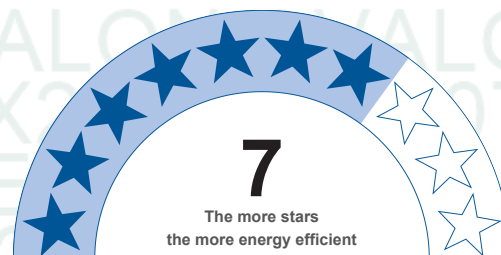
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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



**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME®

29.7 MJ/m²

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

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	13.6
Load limits	N/A	N/A
Features determining load limits		
Floor type (lowest conditioned area)		N/A
NCC climate zone 1 or 2		N/A
Outdoor living area		N/A
Outdoor living area ceiling fan		N/A

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 <https://www.fr5.com.au/QRCodeLandIng?PublicId=6ER1X2M6P0>. When using either link, ensure you are visiting www.fr5.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 & 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 NatHERS heating and cooling load limits Standard 2022 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 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.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

Cost:

No Whole of Home performance assessment conducted for this certificate.



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.



Certificate check

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.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		Occupancy/other
	Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NatHERS heating and cooling load limits for the appropriate climate zone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Certificate check

Continued

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

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

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Insulation installation method

Has the insulation been installed according to the NCC requirements?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Whole of Home performance check (not applicable if a Whole of Home performance 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 Appliance schedule on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 'Appliance schedule' on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 'Appliance schedule' on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Does the hot water system meet the additional requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?	<input type="checkbox"/>	<input type="checkbox"/>			
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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



Room *schedule*

Room	Zone Type	Area [m ²]
Bedroom 4	bedroom	13.1
WC	dayTime	2.2
Bedroom 3	bedroom	17
Bathroom	unconditioned	6.5
Laundry	unconditioned	4.8
Kitchen/Living	kitchen	60.1
GroundHallway	dayTime	20.3
Ensuite 2	nightTime	5.7
WIR	nightTime	6.7
Bedroom 2	bedroom	13.6
Master Bedroom	bedroom	17.5
Ensuite 1	nightTime	11.5
Hallway	dayTime	4.9
Stairs	dayTime	3.6
WIR Master	nightTime	10.8

Window and glazed door *type and performance*

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E -Clear	3.1	0.49	0.47	0.51

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
JAL-002-05 A	Aluminium Louvre Secondary Glaze SG 6mmLE	3.71	0.54	0.51	0.57

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bedroom 4	JAL-002-05 A	WB10	2400	600	louvre	90.0	SW	No
Bedroom 4	JAL-002-05 A	WB09	2400	600	louvre	90.0	SW	No
Bedroom 4	JAL-002-05 A	WB01	1200	2400	louvre	23.0	SE	No
Bedroom 3	JAL-002-05 A	WB03	1200	2400	louvre	23.0	SE	No



Bathroom	JAL-002-05 A	WB02	1200	1800	louvre	30.0	SE	No
Laundry	JAL-002-05 A	WB06	2400	600	louvre	90.0	SW	No
Kitchen/Living	JAL-002-05 A	WB04	2400	600	louvre	90.0	SW	No
Kitchen/Living	ATB-004-03 B	WB05	2800	8300	other	80.0	NE	No
GroundHallway	ATB-004-03 B	WB08a Door	2400	1100	casement	90.0	SW	No
GroundHallway	ATB-004-03 B	WB08b Side fixed	3100	950	fixed	0.0	SW	No
GroundHallway	ATB-004-03 B	WD08 Top fixed	700	1100	fixed	0.0	SW	No
GroundHallway	ATB-004-03 B	WB07	3100	6400	fixed	0.0	NW	No
Ensuite 2	JAL-002-05 A	WB15	2000	600	louvre	90.0	SW	No
Bedroom 2	JAL-002-05 A	WB13	2800	3000	louvre	18.0	NE	No
Bedroom 2	JAL-002-05 A	WB14	2400	600	louvre	90.0	NW	No
Master Bedroom	ATB-004-03 B	WB12b	2800	3000	other	80.0	NE	No
Master Bedroom	JAL-002-05 A	WB12a (Louvre)	2800	600	louvre	90.0	NE	No
Ensuite 1	JAL-002-05 A	WB16	2000	600	louvre	90.0	SW	No
WIR Master	ATB-004-03 B	WB12c	2800	1600	other	80.0	NE	No
WIR Master	JAL-002-05 A	WB11	2400	600	louvre	90.0	SW	No

Roof window* type and performance value

Default* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule



Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	FC - Fibre-cement R4.1	0.7	Dark	Polystyrene expanded (k = 0.039) (R4.1)	No
2	FR5 - Internal Plasterboard Stud Wall	0.7	Dark		No

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bedroom 4	1	3100	4274	SW	351	Yes
Bedroom 4	1	3100	3068	SE	476	Yes
Bedroom 4	1	3100	600	NW	0	Yes
Bedroom 3	1	3100	3985	SE	487	Yes
Bathroom	1	3100	2469	SE	464	Yes
Laundry	1	3100	1780	SW	0	Yes
Laundry	1	3100	2681	NW	0	Yes
Kitchen/Living	1	3100	1759	SW	0	Yes
Kitchen/Living	1	3100	5975	SE	0	Yes
Kitchen/Living	1	3100	10053	NE	470	Yes
Kitchen/Living	1	3100	5981	NW	0	Yes
GroundHallway	1	3100	2047	SW	953	Yes
GroundHallway	2	3100	116	NW	0	Yes
GroundHallway	1	3100	6382	NW	263	Yes
Ensuite 2	1	2800	2764	SW	422	Yes
Ensuite 2	1	2800	2060	NW	0	Yes
WIR	1	2800	2968	NW	0	Yes
Bedroom 2	1	2800	1189	SE	6200	Yes
Bedroom 2	1	2800	3894	NE	454	Yes
Bedroom 2	1	2800	3491	NW	0	Yes
Master Bedroom	1	2800	3662	NE	1680	Yes
Ensuite 1	1	2800	4277	SW	429	Yes



Ensuite 1	1	2800	2680	SE	454	Yes
Stairs	1	1000	987	SW	0	Yes
Stairs	1	700	2072	SE	0	Yes
Stairs	1	700	2071	NW	0	Yes
WIR Master	1	2800	4761	SE	0	No
WIR Master	1	2800	2268	NE	0	Yes
WIR Master	1	2800	1760	SW	457	Yes

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	98.3	
2	Internal plasterboard - Internal Plasterboard Stud Wall R2.7	82.6	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bedroom 4	TMBR - Timber Lined R4.1	13.1	Enclosed Disconnected	R4.1	Timber
WC	TMBR - Timber Lined R4.1	2.2	Enclosed Disconnected	R4.1	Tiles
Bedroom 3	TMBR - Timber Lined R4.1	12	Enclosed Disconnected	R4.1	Timber
Bedroom 3	TMBR - Timber Lined R4.1	5	Enclosed Disconnected	R4.1	Timber
Bathroom	TMBR - Timber Lined R4.1	6.5	Enclosed Disconnected	R4.1	Timber
Laundry	TMBR - Timber Lined R4.1	4.8	Enclosed Disconnected	R4.1	Tiles
Kitchen/Living	TMBR - Timber Lined R4.1	6.7	Enclosed Disconnected	R4.1	Timber
Kitchen/Living	TMBR - Timber Lined R4.1	53.4	Enclosed Disconnected	R4.1	Timber
Ground Hallway	TMBR - Timber Lined R4.1	7.8	Enclosed Disconnected	R4.1	Timber
Ground Hallway	TMBR - Timber Lined R4.1	12.5	Enclosed Disconnected	R4.1	Timber
Ensuite 2	TMBR - Timber Lined R4.1	5.7	Enclosed	R4.1	Tiles
WIR	TMBR - Timber Lined R4.1	6.7	Enclosed	R4.1	Timber
Bedroom 2	TMBR - Timber Lined R4.1	13.6	Enclosed	R4.1	Timber
Master Bedroom	TMBR - Timber Lined R4.1	17.6	Enclosed	R4.1	Timber
Ensuite 1	TMBR - Timber Lined R4.1	11.5	Enclosed	R4.1	Tiles
Hallway	TMBR - Timber Lined R4.1	4.9	Enclosed	R4.1	Timber
Stairs	TMBR - Timber Lined R4.1	3.6	Enclosed	R4.1	Timber



WIR Master	TMBR - Timber LinedR4.1	10.8	Enclosed	R4.1	Timber
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Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Bedroom 4	Plasterboard	R9.2	No
WC	Plasterboard	R9.2	No
Bedroom 3	TMBR - Timber LinedR4.1	R4.1	No
Bedroom 3	Plasterboard	R9.2	No
Bathroom	Plasterboard	R9.2	No
Laundry	TMBR - Timber LinedR4.1	R4.1	No
Kitchen/Living	Plasterboard	R9.2	No
Kitchen/Living	TMBR - Timber LinedR4.1	R4.1	No
GroundHallway	TMBR - Timber LinedR4.1	R4.1	No
GroundHallway	Plasterboard	R9.2	No
Ensuite 2	Plasterboard	R9.2	No
WIR	Plasterboard	R9.2	No
Bedroom 2	Plasterboard	R9.2	No
Master Bedroom	Plasterboard	R9.2	No
Ensuite 1	Plasterboard	R9.2	No
Hallway	Plasterboard	R9.2	No
Stairs	Plasterboard	R9.2	No
WIR Master	Plasterboard	R9.2	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
WC	3	Exhaust Fans	200	200	Sealed
Bathroom	1	Exhaust Fans	200	200	Sealed
Laundry	1	Exhaust Fans	200	200	Sealed
Kitchen/Living	1	Exhaust Fans	160	160	Sealed
Kitchen/Living	1	Heater Flues	400	100	Unsealed
Ensuite 2	1	Exhaust Fans	200	200	Sealed
Ensuite 1	1	Exhaust Fans	200	200	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
Bedroom 4	1	1400



Bedroom 3	1	1400
Kitchen/Living	2	2700
GroundHallway	1	2400
Bedroom 2	1	1800
Master Bedroom	1	1400
Hallway	1	1200
WIR Master	1	1200

Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.7	Dark

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]
No Data Available				

Appliance *schedule*

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

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Hot water system

			Substitution tolerance ranges		
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Zone 3 STC	Zone 3 STC	Assessed daily load
			lower limit	upper limit	
No Whole of Home performance assessment conducted for this certificate.					

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			



Onsite renewable energy *schedule*

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

System type	Orientation	System size or generation capacity
No Whole of Home performance assessment conducted for this certificate.		

Battery *schedule*

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

System type	Size [battery storage capacity]
No Whole of Home performance assessment conducted for this certificate.	



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 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.

Glossary

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 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 air gap 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.

*Refer to glossary.



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)