

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. #HR-H3IGEL-03

Generated on 24 Feb 2024 using Hero 3.1.0.6

Property

Address 40 Riverview Parade, North Manly,
NSW, 2100
Lot/DP 75/-/DP12578
NCC Class* 1a
Floor/all Floors 1 of 2 floors
Type New

Plans

Main Plan Date: 05/02/2024
Prepared by Rapid Plans

Construction and environment

Assessed floor area (m²)*	Exposure Type
Conditioned* 236.0	Suburban
Unconditioned* 14.4	NatHERS climate zone
Total 295.3	56 - Mascot AMO
Garage 44.9	



Accredited assessor

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Accreditation No. 100970
Assessor Accrediting Organisation ABSA
Declaration of interest No Conflict of Interest

NCC Requirements

BCA 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 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



**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	20.1	9.6
Load limits	26	19

Features determining load limits

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

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-H3IGEL-03>.

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



* Refer to glossary.

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.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

Cost:

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		
Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other

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 'Window and glazed door schedule' and 'Roof window schedule' 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 '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 'Floor type' table on this certificate?

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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?

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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?

☐☐☐☐☐

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?

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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.

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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".

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Heating and cooling load limits*

Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?

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* Refer to glossary.

Certificate check

Continued

Approval stage		Construction stage		
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?		☐	☐	☐	☐
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Insulation installation method

Has the insulation been installed according to the NCC requirements?			☐	☐	☐
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Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
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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 'Appliance schedule' on this Certificate?	☐	☐	☐	☐	☐
Does the heating 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 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?	☐	☐	☐	☐	☐
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?	☐	☐			
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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

- External walls on ground floor to be Brick Veneer Stud Wall & R2.70 Fibreglass insulation and white colour render.
- Garage external walls to be fibre-cement clad battened stud wall with R2.70 Fibreglass insulation and white colour render.
- External walls on first floor are AAC (75mm) Clad Stud Wall & R2.7 Fibreglass insulation white colour render.
- Roof colour to be surfmist.
- R2.00 Fibreglass insulation for the internal walls between the garage and other internal areas.
- Suspended Concrete Slab Floor (200mm) with R6.00 Fibreglass underslab insulation for the ground floor slabs (except garage which is concrete slab on ground).
- Suspended AAC floor (75mm) - Lined below with R6 insulation for the first floors.
- R7.00 Fibreglass insulation above the ceiling areas (PB) where there is a roof above. 40mm reflective air under roof.
- All sliding, fixed and double hung doors/windows to be Aluminium thermally broken Double glazing Air Fill High Solar Gain low-E -Clear or any product with U-value less than 3.10 & SHGC value between 0.47 to 0.51
- All awning windows to be Aluminium thermally broken Double glazing Air Fill High Solar Gain low-E -Clear or any product with U-value less than 3.10 & SHGC value between 0.37 - 0.41
- All bedrooms, Theatre room, study & sitting areas to have 1 ceiling fan 1500mm.
- Kitchen/ dining / lounge area to have 2 ceiling fan 1500mm.
- Downlights ceiling penetrations to be insulated

Room schedule

Room	Zone Type	Area (m ²)
Ensuite	Night Time	5.74
WIR	Night Time	5.73
Study	Day Time	8.18
Games/Theater	Day Time	8.99
Bath	Day Time	7.21
Pantry	Day Time	5.38
Bed 5	Bedroom	12.25
Corridor	Day Time	23.19
Kitchen / Dining / Lounge	Kitchen/Living	52.26
Laundry	Unconditioned	6.38
Master	Bedroom	16.86
WIR	Night Time	8.85
Ensuite	Night Time	10.13
Bed 2	Bedroom	16.53
Bed 3	Bedroom	16.63



Room schedule

Room	Zone Type	Area (m ²)
Bed 4	Bedroom	16.48
Bath	Unconditioned	8.00
Hall	Day Time	11.88
Garage	Garage	44.92
Sitting	Living	13.89

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 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*
Bath	ATB-003-03 B	W09	600	1400	Awning	90	SSE	None
Bed 2	ATB-004-03 B	W10	1200	2750	Sliding	45	SSE	None
Bed 3	ATB-004-03 B	D11	2400	4000	Sliding	60	ENE	None
Bed 4	ATB-004-03 B	D12	2400	4000	Sliding	60	ENE	None
Bed 5	ATB-004-03 B	W08	900	2400	Sliding	45	NNW	None
Ensuite	ATB-004-03 B	W07	600	2100	Sliding	45	NNW	None
Ensuite	ATB-004-03 B	W06	1500	900	Sliding	45	WSW	None
Ensuite	ATB-003-03 B	W11	600	1400	Awning	90	SSE	None
Games/Theater	ATB-004-03 B	W04	2400	800	Double Hung	45	SSE	None



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Hall	ATB-004-03 B	W13	1900	2100	Fixed	0	NNW	None
Kitchen / Dining / Lounge	ATB-004-03 B	W05	1500	3300	Sliding	30	SSE	None
Kitchen / Dining / Lounge	ATB-004-03 B	D02	2400	3900	Sliding	60	WSW	None
Kitchen / Dining / Lounge	ATB-004-03 B	D03	2400	3900	Sliding	60	WSW	None
Laundry	ATB-004-03 B	W03	1500	800	Double Hung	45	SSE	None
Master	ATB-004-03 B	D13	2400	4000	Sliding	60	WSW	None
Sitting	ATB-004-03 B	W12	1200	2750	Sliding	45	NNW	None
Study	ATB-003-03 B	W01	1400	900	Awning	90	ENE	None
Study	ATB-003-03 B	W02	1400	900	Awning	90	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 ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
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Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2340	1200	90	ENE
Garage	2040	6000	0	ENE

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
AAC-75, R2.7 Insul & render	AAC (75mm) Clad Stud Wall, R2.7 & render	0.25	Light (White)	2.70	No
Brick Veneer & Render - R2.7 insulation	Brick Veneer Stud Wall, R2.7 insulation & render	0.28	Light (Dover White)	2.70	No
FC-REFL-CAV , R2.7 & rebnder	Fibre-Cement Clad Battened Stud Wall with R2.7 & render	0.28	Light (Dover White)	2.70	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bath	AAC-75, R2.7 Insul & render	2700	2284	SSE	353	No
Bed 2	AAC-75, R2.7 Insul & render	2700	4021	SSE	353	No
Bed 3	AAC-75, R2.7 Insul & render	2700	4009	NNW	336	Yes
Bed 3	AAC-75, R2.7 Insul & render	2700	4148	ENE	1449	Yes
Bed 3	AAC-75, R2.7 Insul & render	2700	1760	WSW	350	Yes
Bed 4	AAC-75, R2.7 Insul & render	2700	4111	ENE	1449	Yes
Bed 4	AAC-75, R2.7 Insul & render	2700	4009	SSE	353	No
Bed 5	Brick Veneer & Render - R2.7 insulation	2700	3694	NNW	406	Yes
Corridor	Brick Veneer & Render - R2.7 insulation	2700	1590	ENE	1877	Yes
Ensuite	Brick Veneer & Render - R2.7 insulation	2700	2721	NNW	406	Yes
Ensuite	Brick Veneer & Render - R2.7 insulation	2700	1208	WSW	437	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Ensuite	AAC-75, R2.7 Insul & render	2700	3021	SSE	353	No
Games/Theater	Brick Veneer & Render - R2.7 insulation	2700	2801	SSE	298	Yes
Games/Theater	Brick Veneer & Render - R2.7 insulation	2700	1160	WSW	422	Yes
Garage	FC-REFL-CAV , R2.7 & rebnder	4050	6462	SSE	413	Yes
Garage	FC-REFL-CAV , R2.7 & rebnder	4050	6312	ENE	1182	Yes
Garage	FC-REFL-CAV , R2.7 & rebnder	4050	810	NNW		Yes
Hall	AAC-75, R2.7 Insul & render	2700	4428	NNW	247	Yes
Kitchen / Dining / Lounge	Brick Veneer & Render - R2.7 insulation	2700	5014	NNW	512	Yes
Kitchen / Dining / Lounge	Brick Veneer & Render - R2.7 insulation	2700	6291	SSE	429	Yes
Kitchen / Dining / Lounge	Brick Veneer & Render - R2.7 insulation	2700	8760	WSW	3078	Yes
Laundry	Brick Veneer & Render - R2.7 insulation	2700	2240	SSE	298	Yes
Master	AAC-75, R2.7 Insul & render	2700	3990	NNW	365	Yes
Master	AAC-75, R2.7 Insul & render	2700	4226	WSW	1558	Yes
Pantry	Brick Veneer & Render - R2.7 insulation	2700	1456	NNW	519	Yes
Sitting	AAC-75, R2.7 Insul & render	2700	3652	NNW	365	Yes
Sitting	AAC-75, R2.7 Insul & render	2700	1053	ENE	353	Yes
Study	Brick Veneer & Render - R2.7 insulation	2700	2711	NNW	406	Yes
Study	Brick Veneer & Render - R2.7 insulation	2700	3016	ENE	367	Yes
Study	Brick Veneer & Render - R2.7 insulation	2700	1510	SSE		Yes
WIR	Brick Veneer & Render - R2.7 insulation	2700	2713	NNW	406	Yes
WIR	AAC-75, R2.7 Insul & render	2700	2640	SSE	353	No
WIR	AAC-75, R2.7 Insul & render	2700	3353	WSW	1558	Yes

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	194.1	0.00
INT-PB	Internal Plasterboard Stud Wall	35.6	2.00
SGL-BRICK-110-EXP	Single 110mm Brick Wall - Exposed	20.5	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	Enclosed (Disc.)	6.00	Tile
Bath	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	7.3	N/A	6.00	Tile
Bath	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.7	Enclosed (Disc.)	6.00	Tile
Bed 2	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	15.1	N/A	6.00	Timber
Bed 2	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	1.5	Enclosed (Disc.)	6.00	Timber
Bed 3	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	15.8	N/A	6.00	Timber
Bed 3	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.8	Enclosed (Disc.)	6.00	Timber
Bed 4	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	16.0	N/A	6.00	Timber
Bed 4	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.4	Enclosed (Disc.)	6.00	Timber
Bed 5	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	Enclosed (Disc.)	6.00	Timber
Corridor	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	23.2	Enclosed (Disc.)	6.00	Timber
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.7	Enclosed (Disc.)	6.00	Tile
Ensuite	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	10.1	N/A	6.00	Tile
Games/Theater	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.0	Enclosed (Disc.)	6.00	Timber
Garage	CSOG-200: Concrete Slab on Ground (200mm)	44.9	N/A	0.00	Exposed
Hall	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	11.5	N/A	6.00	Timber
Hall	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.4	Enclosed (Disc.)	6.00	Timber
Kitchen / Dining / Lounge	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	52.3	Enclosed (Disc.)	6.00	Timber
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.4	Enclosed (Disc.)	6.00	Tile

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Master	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	16.4	N/A	6.00	Timber
Master	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.5	Enclosed (Disc.)	6.00	Timber
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	Enclosed (Disc.)	6.00	Timber
Sitting	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	12.9	N/A	6.00	Timber
Sitting	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	1.1	Enclosed (Disc.)	6.00	Timber
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.2	Enclosed (Disc.)	6.00	Timber
WIR	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.7	Enclosed (Disc.)	6.00	Timber
WIR	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	8.6	N/A	6.00	Timber
WIR	AAC-75-LINED: Suspended AAC (Aerated Autoclaved Concrete) Floor (75mm) - Lined Below	0.2	Enclosed (Disc.)	6.00	Timber

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bath	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Bed 2	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Bed 3	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Bed 4	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Bed 5	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Corridor	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Ensuite	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Games/Theater	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Garage	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Hall	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Kitchen / Dining / Lounge	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Laundry	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Master	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Pantry	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Sitting	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
Study	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes
WIR	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	7.00	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bath	4	Downlight	100	Sealed
Bath	1	Exhaust Fan	350	Sealed
Bed 2	6	Downlight	100	Sealed
Bed 3	6	Downlight	100	Sealed
Bed 4	6	Downlight	100	Sealed
Bed 5	3	Downlight	100	Sealed
Corridor	9	Downlight	100	Sealed
Ensuite	3	Downlight	100	Sealed
Games/Theater	2	Downlight	100	Sealed
Garage	17	Downlight	100	Sealed
Hall	2	Downlight	100	Sealed
Kitchen / Dining / Lounge	20	Downlight	100	Sealed
Kitchen / Dining / Lounge	1	Exhaust Fan	350	Sealed
Laundry	2	Downlight	100	Sealed
Master	6	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
Sitting	5	Downlight	100	Sealed
Study	2	Downlight	100	Sealed
WIR	3	Downlight	100	Sealed

* Refer to glossary.

Ceiling fans

Location	Quantity	Diameter (mm)
Bed 2	1	1500
Bed 3	1	1500
Bed 4	1	1500
Bed 5	1	1500
Games/Theater	1	1500
Kitchen / Dining / Lounge	2	1500
Master	1	1500
Sitting	1	1500
Study	1	1500

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	0.33	Light (Surfmist)

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				

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 home's 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 home's 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.