Nationwide House Energy Rating Scheme® NatHERS® Certificate No. 7KLLMFFM49

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Property

Address	Lot B, 2 Handle Street, Bass Hill, NSW, 2197
Lot/DP	29/238346
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	238346, Issue A, 25.2.2024 DA
Prepared by	Architecture Insight

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	151.4	suburban
Unconditioned*	31.5	**NatHERS climate zone**
Total	182.9	56 Mascot AMO
Garage	19.2	

Accredited assessor

Name	Dimitrios Harakidas
Business name	AENEC
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Phone	0416316204
Accreditation No.	HERA10042
Assessor Accrediting Organisation	HERA
Declaration of interest	No

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

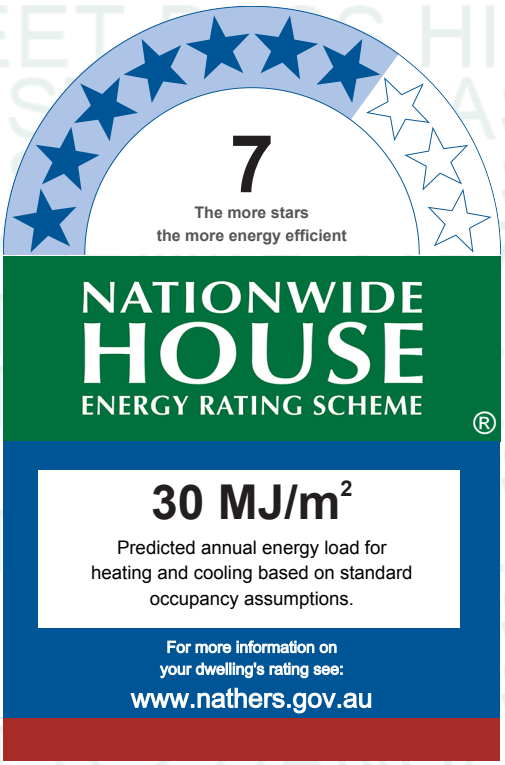
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	22.8	7.2
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=7KLLMFFM49 When using either link, ensure you are visiting www.fr5.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 & 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 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.

*Refer to glossary.

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?	☐	☐	☐	☐	☐
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 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?	☐	☐	☐	☐	☐
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 the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*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?		☐	☐	☐	☐
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 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?	☐	☐	☐	☐	☐
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?	☐	☐	☐	☐	☐
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?	☐	☐			
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 2022 > Volume 2 > H5P2 (fall prevention barriers) are in place. North Pointer shown on the plans has been calculated to be the True North. No trees have been modelled as no relevant information has been provided. For all insulation installed the rating called out in the NatHERS is the primary factor and not its description. If these are not in place then this Nathers must be revised.

*Refer to glossary.

Room *schedule*

Room	Zone Type	Area [m²]
Garage	garage	19.2
BATH GF	unconditioned	5.7
LDRY	unconditioned	6.6
LOUNGE	living	10.2
WIP	dayTime	2.9
ENTRY - CORRIDOR	dayTime	18.8
Kitchen/Living	kitchen	41.8
Bedroom 4	bedroom	12.8
Bedroom 3	bedroom	11.6
Bedroom 2	bedroom	10.9
Bedroom M	bedroom	16.6
WIR	nightTime	4.5
ENS	nightTime	5.6
BATH UP	dayTime	7.9
LANDING	dayTime	15.8
VOID	doubleHeightVoid	16

Window and glazed door *type and performance*

Default* windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ATB-006-03 B	Al Thermally Broken B DG Argon Fill High Solar Gain low-E -Clear	2.9	0.51	0.48	0.54
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
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*

*Refer to glossary.

BATH GF	ALM-002-01 A	W2.1	600	800	sliding	45.0	SE	No
LOUNGE	ALM-002-01 A	W2.4	2400	1500	sliding	25.0	NE	No
Kitchen/Living	ATB-006-03 B	SD2.1	2400	4600	sliding	45.0	SW	No
Kitchen/Living	ATB-005-03 B	W2.3	900	850	awning	90.0	SE	No
Kitchen/Living	ATB-006-03 B	W2.3	1200	850	fixed	0.0	SE	No
Kitchen/Living	ATB-005-03 B	W2.2	900	850	awning	90.0	SE	No
Kitchen/Living	ATB-006-03 B	W2.2	1200	850	fixed	0.0	SE	No
Bedroom 4	ALM-002-01 A	W2.10	900	2100	sliding	45.0	SW	No
Bedroom 3	ALM-002-01 A	W2.13	900	2100	sliding	45.0	SE	No
Bedroom 2	ALM-002-01 A	W2.6	900	2100	sliding	45.0	SE	No
Bedroom M	ATB-006-03 B	W2.5	900	2100	sliding	45.0	SE	No
Bedroom M	ATB-006-03 B	SD2.2	2400	2400	sliding	45.0	NE	No
Bedroom M	ATB-006-03 B	W2.12	1500	1200	fixed	0.0	NE	No
ENS	ALM-004-04 A	W2.11	2400	1500	fixed	0.0	NE	No
VOID	ATB-006-03 B	W2.9	2100	2400	fixed	0.0	SW	No
VOID	ATB-005-03 B	W2.8	900	850	awning	90.0	SE	No
VOID	ATB-006-03 B	W2.8	1200	850	fixed	0.0	SE	No
VOID	ATB-005-03 B	W2.7	900	850	awning	90.0	SE	No
VOID	ATB-006-03 B	W2.7	1200	850	fixed	0.0	SE	No

Roof window* *type and performance value*

Default* roof windows

				Substitution tolerance ranges	
Window ID	**Window description**	**Maximum U-value***	**SHGC***	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
GEN-04-004a	DC: Double Clear	

*Refer to glossary.

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
BATH UP	GEN-04-004a	SK2.1	500	0.5	SE	None	No

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	3000	100.0	NE
LDRY	2400	820	100.0	SE
ENTRY - CORRIDOR	2200	1200	100.0	NE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	FR5 - Brick Veneer	0.5	Medium		No
2	AENEC - BRICK VENEER - INSULATED	0.3	Light	Rockwool batt: R2.5 (R2.5)	No
3	AENEC - CAVITY BRICK FOILBOARD	0.3	Light	Polystyrene expanded (k = 0.039) (R0.5)	Yes
4	AENEC - CAVITY BRICK FOILBOARD	0.5	Medium	Polystyrene expanded (k = 0.039) (R0.5)	Yes

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Garage	1	2890	5800	SE	0	Yes
Garage	1	2890	3302	NE	0	Yes
Garage	1	2890	500	NW	0	Yes
BATH GF	2	2700	2112	SE	0	Yes
LDRY	2	2700	792	SW	0	Yes
LDRY	2	2700	1990	SE	0	Yes
LOUNGE	2	2700	515	NE	0	Yes
LOUNGE	2	2700	2482	NE	0	Yes
LOUNGE	3	2700	2771	NW	0	Yes
LOUNGE	4	2700	629	NW	0	No
WIP	4	2700	1401	NW	0	No
ENTRY - CORRIDOR	2	2700	1558	NE	1497	Yes
ENTRY - CORRIDOR	4	2700	1998	NW	0	No
Kitchen/Living	2	2700	7247	SW	3586	Yes
Kitchen/Living	2	2700	3996	SE	0	Yes
Kitchen/Living	4	2700	6600	NW	0	No

*Refer to glossary.

Bedroom 4	4	2700	4293	NW	0	No
Bedroom 4	2	2700	3158	SW	0	Yes
Bedroom 3	2	2700	787	SW	0	Yes
Bedroom 3	2	2700	3002	SE	0	No
Bedroom 2	2	2700	3002	SE	0	No
Bedroom M	2	2700	3399	SE	0	No
Bedroom M	2	2700	3375	NE	1405	Yes
Bedroom M	2	2700	1840	NE	0	Yes
WIR	2	2700	258	NE	0	Yes
WIR	2	2700	431	NE	0	Yes
ENS	2	2700	1951	NE	0	Yes
ENS	3	2700	2754	NW	0	Yes
ENS	4	2700	645	NW	0	No
BATH UP	4	2700	3405	NW	0	No
LANDING	4	2700	2002	NW	0	No
VOID	2	2700	4000	SW	0	Yes
VOID	2	2700	4001	SE	0	Yes
VOID	2	2700	309	NW	0	Yes

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	23.5	Glass fibre batt: R1.5 (R1.5)
2	FR5 - Internal Plasterboard Stud Wall	181.6	
3	AENEC - BRICK VENEER - INSULATED	8.8	Rockwool batt: R2.5 (R2.5)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Garage	FR5 - CSOG: Slab on Ground	1.4	Enclosed	R0.0	none
Garage	FR5 - CSOG: Slab on Ground	17.8	Enclosed	R0.0	none
BATH GF	FR5 - CSOG: Slab on Ground	5.7	Enclosed	R0.0	Tiles
LDRY	FR5 - CSOG: Slab on Ground	6.6	Enclosed	R0.0	Tiles
LOUNGE	FR5 - CSOG: Slab on Ground	10.2	Enclosed	R0.0	Tiles
WIP	FR5 - CSOG: Slab on Ground	2.9	Enclosed	R0.0	Tiles
ENTRY - CORRIDOR	FR5 - CSOG: Slab on Ground	18.8	Enclosed	R0.0	Tiles

*Refer to glossary.

Kitchen/Living	FR5 - CSOG: Slab on Ground	41.3	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - CSOG: Slab on Ground	0.5	Enclosed	R0.0	Tiles
Bedroom 4	FR5 - Timber Lined	12.8	Enclosed	R0.0	Timber
Bedroom 3	FR5 - Timber Lined	11.6	Enclosed	R0.0	Timber
Bedroom 2	FR5 - Timber Lined	6.1	Enclosed	R2.0	Timber
Bedroom 2	FR5 - Timber Lined	4.8	Enclosed	R0.0	Timber
Bedroom M	FR5 - Timber Lined	11.4	Enclosed	R2.0	Timber
Bedroom M	FR5 - Timber Lined	5.2	Enclosed	R0.0	Timber
WIR	FR5 - Timber Lined	4.5	Enclosed	R0.0	Timber
ENS	FR5 - Timber Lined	5.6	Enclosed	R0.0	Tiles
BATH UP	FR5 - Timber Lined	7.9	Enclosed	R0.0	Tiles
LANDING	FR5 - Timber Lined	0	Enclosed	R0.0	Timber
LANDING	FR5 - Timber Lined	15.7	Enclosed	R0.0	Timber
VOID	No Floor	16	Enclosed	R0.0	No Floor

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Garage	Plasterboard	R2.0	No
Garage	FR5 - Timber Lined	R2.0	No
BATH GF	FR5 - Timber Lined	R0.0	No
LDRY	FR5 - Timber Lined	R0.0	No
LOUNGE	FR5 - Timber Lined	R0.0	No
WIP	FR5 - Timber Lined	R0.0	No
ENTRY - CORRIDOR	FR5 - Timber Lined	R0.0	No
Kitchen/Living	FR5 - Timber Lined	R0.0	No
Kitchen/Living	Plasterboard	R2.0	No
Bedroom 4	Plasterboard	R4.0	Yes
Bedroom 3	Plasterboard	R4.0	Yes
Bedroom 2	Plasterboard	R4.0	Yes
Bedroom 2	Plasterboard	R4.0	Yes
Bedroom M	Plasterboard	R4.0	Yes
Bedroom M	Plasterboard	R4.0	Yes
WIR	Plasterboard	R4.0	Yes
ENS	Plasterboard	R4.0	Yes
BATH UP	Plasterboard	R4.0	Yes
LANDING	Plasterboard	R4.0	Yes
VOID	Plasterboard	R4.0	Yes

*Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Garage	7	Downlights	80	80	Sealed
BATH GF	2	Downlights	80	80	Sealed
BATH GF	1	Exhaust Fans	200	200	Sealed
LDRY	2	Downlights	80	80	Sealed
LDRY	1	Exhaust Fans	200	200	Sealed
LOUNGE	4	Downlights	80	80	Sealed
WIP	1	Downlights	80	80	Sealed
ENTRY - CORRIDOR	5	Downlights	80	80	Sealed
Kitchen/Living	10	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	200	Sealed
Bedroom 4	5	Downlights	80	80	Sealed
Bedroom 3	4	Downlights	80	80	Sealed
Bedroom 2	4	Downlights	80	80	Sealed
Bedroom M	6	Downlights	80	80	Sealed
WIR	2	Downlights	80	80	Sealed
ENS	1	Exhaust Fans	200	200	Sealed
ENS	2	Downlights	80	80	Sealed
BATH UP	1	Exhaust Fans	200	200	Sealed
BATH UP	3	Downlights	80	80	Sealed
LANDING	6	Downlights	80	80	Sealed
VOID	6	Downlights	80	80	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
LOUNGE	1	1800
Kitchen/Living	1	2700
Bedroom M	1	2100

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium
Cont:Attic-Continuous	1.3	0.5	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]

*Refer to glossary.

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 lower limit	Zone 3 STC upper limit	Assessed daily load
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.	

*Refer to glossary.

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)

*Refer to glossary.