

NCC 2019



ABCB NCC 2019 VOLUME TWO AMENDMENT 1 BASIX Thermal Comfort Energy Efficiency Assessment

Deposited Plan (DP) Number
171363

REFERENCE
607068 v2.1

SITE ADDRESS
Lot 1 (#36) Dalley Street QUEENSCLIFF Northern Beaches Council 2096

DWELLING TYPE
Double Storey

COMMISSIONED BY
McDonald Jones Homes

ASSESSMENT DATE
13/09/2024

Energy Advance Australia Pty. Ltd.
NatHERS Accreditation Number: DMN/14/1662
34 Dellamarta Road WANGARA 6065
PO Box 1436 WANGARA DC 6947
ACN: 60 9332014 | 1300 850 228
energy@energyadvance.com.au
1300 850 228



THE SUMMARY

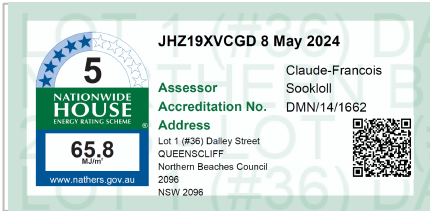
Address	Lot 1 (#36) Dalley Street QUEENSCLIFF Northern Beaches Council 2096
Dwelling Type	Double Storey
State	New South Wales
Site Exposure	Suburban
Ground Floor Type	Concrete Slab-on-Ground
NatHERS Climate Zone	56
FirstRate 5 Engine:	Chenath Engine 3.21
Certificate Number	JHZ19XVCGD
Deposited Plan (DP) Number	171363
Conditioned Floor Area (m ²)	135.50
Unconditioned Floor (m ²)	11.50
Total (m ²)	147.00

	Area (m2)	Allowance (W/m2)	Total Maximum Watts
Class 1 Total Area	169.25	5.0	846.3
Class 10a Total Area	19.39	3.0	58.2
Total Outdoor Areas	1.89	4.0	7.6
Maximum Ceiling Insulation Penetration	Maximum Allowance 0.50%	Maximum Penetration (m2) 0.85	

If approved fireproof downlight covers, which can be fully covered by insulation, are specified and noted on the electrical plan by the building designer or architect or if IC4-rated downlights are installed, then there is no need to allow for the ceiling penetration.

ASSESSMENT CALCULATIONS & SOFTWARE RESULTS

	Target (MJ/m².pa)	Proposed (MJ/m².pa)	Efficiency Benchmark
Heating:	40.0	39.8	Pass: 0.5%
Cooling:	26.0	26.0	Pass: 0.0%
Total:	66.0	65.8	

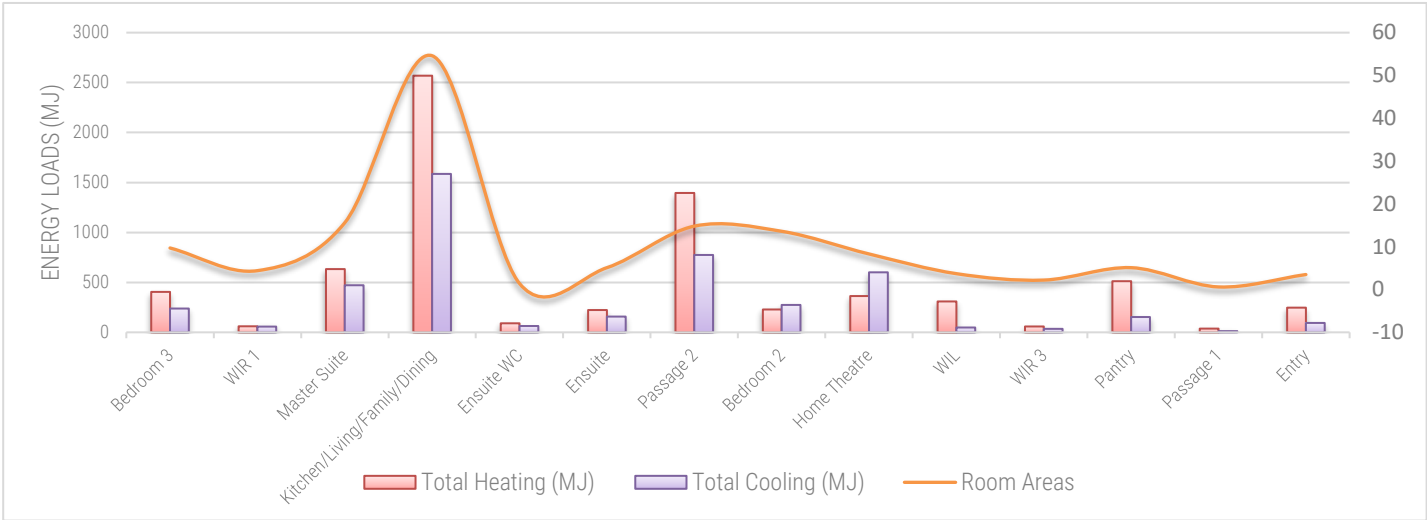


THE ANALYSIS

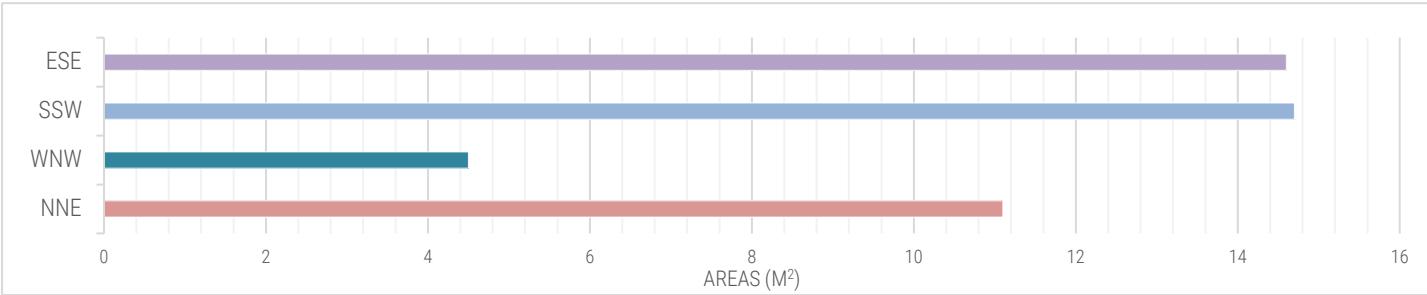
Dwelling Thermal Performance Per Zone Area

The indicated heating and cooling loads represent the estimated annual energy consumption (in MJ) for this home. A higher load signifies a greater amount of energy required to maintain thermal comfort, highlighting potential areas for efficiency improvement.

Typically, the Room Area line serves as a gauge for anticipated energy usage in a specific area. Deviations from this line can signal better or worse performance than expected, providing insights into the energy efficiency of that space.



Window and Door Orientations



The chart to the left illustrates the positions of all glazed doors and windows on the home's exterior.

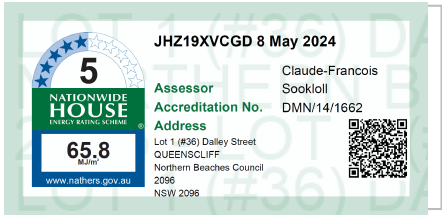
To enhance thermal performance:

1. Increase unsheltered glazing facing north.
2. Limit west-facing glazing to under 5% of the floor area.
3. Keep south-facing glazing under 5% of the floor area, maximizing openable space if possible.
4. Restrict east-facing glazing to less than 8% of the floor area.

Refer to floor /elevation plans for specific shading locations.

Dwelling Window/Glazed Door to Floor Area Ratio

33.1 %



THE SPECIFICATIONS

Walls

CONSTRUCTION TYPE AND INSULATION	LOCATION	ADDITIONAL NOTES
AAC Panel R2.0 Insulation VP Wrap	External	Location as per plans
INT Plasterboard Stud Wall R2.0 Insulation	Internal	Location as per plans
Framed R2.0 Insulation VP Wrap	External	Location as per plans
		Location as per plans
		Location as per plans

ADDITIONAL NOTES

Refer to Plans/Drawings for the location of external walls.
Internal wall insulation: Throughout all internal walls

Roof and Ceiling

CONSTRUCTION TYPE	CEILING INSULATION (R)	SARKING	ROOF BLANKET (R)
Ceiling with Floor Above	None	No	None
Metal Roof OR Tiled Roof w/Sarking	6.0	No	1.3

ADDITIONAL NOTES

Solar Absorptance: Light roof colour

Floor

CONSTRUCTION TYPE	VENTILATION	FLOOR INSUL (R)	SLAB EDGE (R)	FLOOR AREAS (m ²)
85mm Concrete 225mm Waffle	Enclosed	Integrated	None	92.6
Framed Suspended Floor R3.0 Insulation	Enclosed	3.0	None	75.4
Framed Suspended Floor R3.0 Insulation	Elevated	3.0	None	3.4

ADDITIONAL NOTES

Glazing

WERS CODE*	CHARACTERISTIC	TYPE	U _w -VALUE	SHGC _w	AREA (m ²)	ADDITIONAL NOTES
BRD-112-01 A	Standard Single Glazing	Awning	6.54	0.67	14.38	Location as per plans
TIM-001-01 W	Standard Single Glazing	Hinged Door	5.40	0.56	2.13	Location as per plans
AWS-066-07 A	Standard Single Glazing	Fixed	5.91	0.75	5.87	Location as per plans
BRD-006-01 A	Standard Single Glazing	Bi-fold Door	6.08	0.61	7.51	Location as per plans
BRD-149-43 A	Standard Single Glazing	Sliding	6.41	0.73	4.47	Location as per plans
BRD-033-01 A	Standard Single Glazing	Sliding Door	6.19	0.74	3.53	Location as per plans
BRD-154-36 A	Standard Double Glazing	Sliding	3.85	0.61	7.01	Location as per plans

*Proxy WERS codes, though not from the original manufacturer, may be used to meet U-Value and SHGC value limitations and are compliant. The U-value of the window or glazed door selected must be lower than the value shown. The SHGC of the window or glazed door selected must be +/-5% of the value shown (if certified under BASIX then +/-10% is allowable)

5

NATIONWIDE
HOUSE

ENERGY RATING SCHEME

65.8

MJ/m²

www.nathers.gov.au

JHZ19XVCGD 8 May 2024

Assessor
Accreditation No.
Address

Claude-Francois
Sookloll
DMN/14/1662

Lot 1 (#36) Dalley Street
QUEENSCLIFF
Northern Beaches Council
2096
NSW 2096

THE REGULATIONS

NSW 3.12.1 Application of NSW Part 3.12.1

- (a) Compliance with NSW 3.12.1.1 satisfies NSW P2.6.1(a) for thermal insulation and thermal breaks.
- (b) NSW PART 3.12.1 only applies to thermal insulation in a Class 1 or 10 building where a development consent specifies that the insulation is to be provided as part of the development.
- (c) In (b), the term development consent has the meaning given by the Environmental Planning and Assessment Act 1979.
- (d) The Deemed-to-Satisfy Provisions of this Part for thermal breaks apply to all Class 1 and Class 10a buildings with a conditioned space.

NSW 3.12.1.1 Compliance with NCC Provisions

- (a) Thermal insulation in a building must comply with the national BCA provisions of 3.12.1.1.
- (b) A thermal break must be provided between the external cladding and framing by national BCA provisions of—
 - (i) 3.12.1.2(c) for a metal framed roof; and (ii) 3.12.1.4(b) for a metal framed wall.
- (c) Compensation for reducing ceiling insulation must comply with the national BCA provisions of 3.12.1.2(e).
- (d) A floor with an in-slab or in-screed heating or cooling system must comply with the national BCA provisions of—
 - (i) 3.12.1.5(a)(ii), (iii) and (e) for a suspended floor; or (ii) 3.12.1.5(c), (d) and (e) for a concrete slab-on-ground.

NSW 3.12.3 Application of NSW Part 3.12.3

- (a) Compliance with NSW 3.12.3.1 satisfies NSW P2.6.1(b) for building sealing.
- (b) NSW Part 3.12.3 does not apply to—
 - (i) existing buildings being relocated; or (ii) Class 10a buildings—
 - (A) without a conditioned space or (B) for the accommodation of vehicles or
 - (iii) parts of buildings that cannot be fully enclosed; or
 - (iv) a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or
 - (v) a building in climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler.

NSW 3.12.3.1 Compliance with NCC Provisions

The sealing of a building must comply with the national BCA provisions 3.12.3.1 to 3.12.3.6.

NSW 3.12.5 SERVICES: APPLICATION OF NSW PART 3.12.5

- (a) Compliance with NSW 3.12.5.1 satisfies NSW P2.6.2 for services.
- (b) NSW Part 3.12.5 does not apply to existing services associated with existing buildings being relocated.

NSW 3.12.5.1 Compliance with NCC Provisions

Services must comply with the national BCA provisions 3.12.5.0 to 3.12.5.3.

NSW P2.6.1(a) Building fabric

- (i) Thermal insulation in a building must be installed and have characteristics that facilitate the efficient use of energy for artificial heating and cooling.
- (ii) A building must have, to the degree necessary, thermal breaks installed between the framing and external cladding, to facilitate efficient thermal performance of the building envelope.

Application:

NSW P2.6.1(a) only applies to thermal insulation in a Class 1 or 10 building where a development consent specifies that the insulation is to be provided as part of the development.

In (a), the term development consent has the meaning given by the Environmental Planning and Assessment Act 1979.

NSW P2.6.1(a)(ii) only applies to a metal framed roof and a metal framed wall.

NSW P2.6.1(b) Building sealing

A building must have, to the degree necessary, a level of building sealing against air leakage to facilitate the efficient use of energy for artificial heating and cooling appropriate to—

- (i) the function and use of the building; and
- (ii) the internal environment; and
- (iii) the geographic location of the building.

NSW P2.6.1(b) does not apply to—

Existing buildings being relocated; or Class 10a buildings without a conditioned space; or for the accommodation of vehicles; or parts of buildings that cannot be fully enclosed; or a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or a building in climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler.

NSW P2.6.2 Services

Domestic services, including any associated distribution system and components must, to the degree necessary, have features that facilitate the efficient use of energy appropriate to—

- (a) the domestic service and its usage, and (b) the geographic location of the building, and (c) the location of the domestic service and (d) the energy sources.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. JHZ19XVCGD

Generated on 8 May 2024 using FirstRate5: 5.3.2b (3.21)

Property

Address Lot 1 (#36) Dalley Street QUEENSCLIFF, Northern Beaches Council 2096, NSW, 2096
Lot/DP 1|171363
NCC Class* Class 1a
Type New Home

Plans

Main plan 607068 v2.0 | 08/05/2024
Prepared by McDonald Jones Homes

Construction and environment

Assessed floor area (m²)*		Exposure type
Conditioned*	135.5	suburban
Unconditioned*	28.6	NatHERS climate zone
Total	164.1	56 Mascot AMO
Garage	17.1	



Accredited assessor

Name Claude-Francois Sookloll
Business name Energy Advance
Email energy@energyadvance.com.au
Phone 1300 850 228
Accreditation No. DMN/14/1662
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.



Thermal performance

Heating	Cooling
39.8	26
MJ/m²	MJ/m²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

To verify this certificate, scan the QR code or visit <https://www.fr5.com.au/QRCodeLanding?PublicId=JHZ19XVCGD> When using either link, ensure you are visiting www.FR5.com.au.





Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling’s rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the ‘number’ and ‘type’ of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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 level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

Provisional* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

Additional Notes

BCA Climate Zone: 5

Please note, a non-reflective vapour permeable wall wrap has been modelled throughout the external walls of this dwelling
Perimeter insulation has not been included in the modelling of this dwelling

Eaves indicated by the ‘Horizontal shading feature* maximum projection (mm)’ may not be directly opposing the respective wall (i.e. some eaves may be horizontally offset)

Where applicable, an additional 150mm has been added to the projection of all ‘Horizontal shading features & eaves’ to account for the Gutter & Fascia Board

Please note, restricted window openings (%) have been modelled as per NCC 2019 requirements

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
TIM-001-01 W	Timber A SG Clear	5.4	0.56	0.53	0.59

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-112-01 A	ESS Awning 52 SG 4mmClr	6.54	0.67	0.64	0.7
AWS-066-07 A	RES SERIES 516 FIXED WINDOW SG 5mmClr	5.91	0.75	0.71	0.79

* Refer to glossary.



BRD-006-01 A	SIG Bi Fold Door (100mm) SG 4Clr	6.08	0.61	0.58	0.64
BRD-149-43 A	Essential Sliding Window 52 SG 4mmClr	6.41	0.73	0.69	0.77
BRD-033-01 A	ESS Sliding Door (80mm) SG 4Clr	6.19	0.74	0.7	0.78
BRD-154-36 A	Essential Sliding Window 67 DG 4mmClr_10Ar_4mmClr	3.85	0.61	0.58	0.64

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Home Theatre	BRD-112-01 A	W1	2360	1570	awning	45.0	NNE	No
Entry	TIM-001-01 W	D1	2406	887	casement	90.0	NNE	No
Kitchen/Living/-Family/Dining	AWS-066-07 A	W2	727	610	fixed	0.0	WNW	No
Kitchen/Living/-Family/Dining	AWS-066-07 A	W3	727	3010	fixed	0.0	WNW	No
Kitchen/Living/-Family/Dining	BRD-006-01 A	D2	2400	3130	other	90.0	SSW	No
Kitchen/Living/-Family/Dining	BRD-149-43 A	W6	2060	2170	sliding	30.0	ESE	No
Kitchen/Living/-Family/Dining	BRD-112-01 A	W5	2060	850	awning	90.0	ESE	No
Pantry	BRD-112-01 A	W4	2060	850	awning	90.0	SSW	No
Laundry	BRD-033-01 A	D3	2400	1470	sliding	45.0	ESE	No
Bedroom 2	BRD-112-01 A	W7	1460	1810	awning	30.0	NNE	No
Bedroom 3	BRD-112-01 A	W8	1460	1810	awning	30.0	NNE	No
Master Suite	BRD-154-36 A	W12	1800	3010	sliding	10.0	SSW	No
Master Suite	BRD-154-36 A	W13	600	2650	sliding	45.0	ESE	No
Passage 2	AWS-066-07 A	W14	2060	1570	fixed	0.0	ESE	No
Passage 2	BRD-112-01 A	W9	860	610	awning	90.0	WNW	No
Bathroom	BRD-112-01 A	W10	1200	610	awning	90.0	WNW	No
Ensuite	BRD-112-01 A	W11	1030	610	awning	10.0	WNW	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

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

* Refer to glossary.



Roof window *schedule*

Location	Window ID	Window no.	Opening %	Area (m ²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2400	1605	100.0	NNE
Garage	2400	970	100.0	NNE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	NCC 2019 VAPOUR - AAC Panel R2.0 Insulation VP Wrap	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No
2	NCC 2019 VAPOUR - Framed R2.0 Insulation VP Wrap	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	1	2745	5563	WNW	0	Yes
Garage	1	2745	478	ESE	1050	Yes
Garage	1	2745	1908	NNE	800	Yes
Garage	1	2745	1165	NNE	600	No
Home Theatre	1	2745	2645	NNE	0	No
Home Theatre	1	2745	1470	WNW	1400	Yes
Home Theatre	1	2745	3150	ESE	0	Yes
Entry	1	2745	1270	NNE	1470	Yes
Kitchen/Living/Family/Dining	1	2745	5175	WNW	0	Yes
Kitchen/Living/Family/Dining	1	2745	4580	SSW	0	No
Kitchen/Living/Family/Dining	1	2745	8935	ESE	0	Yes
Pantry	1	2745	2475	SSW	600	No
Pantry	1	2745	2070	WNW	0	Yes

* Refer to glossary.



Laundry	1	2745	1715	ESE	0	Yes
Bedroom 2	2	2450	4940	ESE	730	Yes
Bedroom 2	2	2450	2750	NNE	730	No
Bedroom 3	2	2450	3205	WNW	730	Yes
Bedroom 3	2	2450	3040	NNE	730	No
WIR 3	2	2450	1100	WNW	730	Yes
WIL	2	2450	1335	ESE	730	Yes
Master Suite	2	2450	3815	SSW	730	No
Master Suite	2	2450	3700	ESE	730	Yes
WIR 1	2	2450	1600	ESE	730	Yes
Passage 2	2	2450	2075	ESE	730	Yes
Passage 2	2	2450	1475	WNW	730	Yes
Bathroom	2	2450	4170	WNW	730	Yes
Ensuite WC	2	2450	900	WNW	730	Yes
Ensuite	2	2450	2725	WNW	764	Yes
Ensuite	2	2450	1983	SSW	730	No

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
1	NCC 2019 STANDARD - INT Plasterboard Stud Wall R2.0 Insulation	162.9	Glass fibre batt: R2.0 (R2.0)

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FLOOR - 85mm Concrete 225mm Waffle	10.2	Enclosed	R0.0	none
Garage	FLOOR - 85mm Concrete 225mm Waffle	6.9	Enclosed	R0.0	none
Home Theatre	FLOOR - 85mm Concrete 225mm Waffle	8.3	Enclosed	R0.0	Carpet
Passage 1	FLOOR - 85mm Concrete 225mm Waffle	0.6	Enclosed	R0.0	Timber
Entry	FLOOR - 85mm Concrete 225mm Waffle	3.5	Enclosed	R0.0	Timber
Kitchen/Living/Family/Dining	FLOOR - 85mm Concrete 225mm Waffle	6.4	Enclosed	R0.0	Timber
Kitchen/Living/Family/Dining	FLOOR - 85mm Concrete 225mm Waffle	48.3	Enclosed	R0.0	Timber
Pantry	FLOOR - 85mm Concrete 225mm Waffle	2.6	Enclosed	R0.0	Timber
Pantry	FLOOR - 85mm Concrete 225mm Waffle	2.5	Enclosed	R0.0	Timber
Laundry	FLOOR - 85mm Concrete 225mm Waffle	3.3	Enclosed	R0.0	Tiles
Bedroom 2	FLOOR - Framed Suspended Floor R3.0 Insulation	13.6	Enclosed	R3.0	Carpet
Bedroom 3	FLOOR - Framed Suspended Floor R3.0 Insulation	6.4	Enclosed	R3.0	Carpet
Bedroom 3	FLOOR - Framed Suspended Floor R3.0 Insulation	3.4	Elevated	R3.0	Carpet

WIR 3	FLOOR - Framed Suspended Floor R3.0 Insulation	2.2	Enclosed	R3.0	Carpet
WIL	FLOOR - Framed Suspended Floor R3.0 Insulation	3.7	Enclosed	R3.0	Carpet
Master Suite	FLOOR - Framed Suspended Floor R3.0 Insulation	15.6	Enclosed	R3.0	Carpet
WIR 1	FLOOR - Framed Suspended Floor R3.0 Insulation	4.4	Enclosed	R3.0	Carpet
Passage 2	FLOOR - Framed Suspended Floor R3.0 Insulation	14.8	Enclosed	R3.0	Carpet
Bathroom	FLOOR - Framed Suspended Floor R3.0 Insulation	8.2	Enclosed	R3.0	Tiles
Ensuite WC	FLOOR - Framed Suspended Floor R3.0 Insulation	1.4	Enclosed	R3.0	Tiles
Ensuite	FLOOR - Framed Suspended Floor R3.0 Insulation	5.1	Enclosed	R3.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Garage	Plasterboard	R6.0	Yes
Home Theatre	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Passage 1	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Entry	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Kitchen/Living/Family/Dining	Plasterboard	R6.0	Yes
Kitchen/Living/Family/Dining	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Pantry	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Pantry	Plasterboard	R6.0	Yes
Laundry	FLOOR - Framed Suspended Floor R3.0 Insulation	R3.0	No
Bedroom 2	Plasterboard	R6.0	Yes
Bedroom 3	Plasterboard	R6.0	Yes
Bedroom 3	Plasterboard	R6.0	Yes
WIR 3	Plasterboard	R6.0	Yes
WIL	Plasterboard	R6.0	Yes
Master Suite	Plasterboard	R6.0	Yes
WIR 1	Plasterboard	R6.0	Yes
Passage 2	Plasterboard	R6.0	Yes
Bathroom	Plasterboard	R6.0	Yes
Ensuite WC	Plasterboard	R6.0	Yes
Ensuite	Plasterboard	R6.0	Yes

Ceiling penetrations*



Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living/Family/Dining	1	Exhaust Fans	185	Sealed
Kitchen/Living/Family/Dining	1	Exhaust Fans	250	Sealed
Ensuite WC	1	Exhaust Fans	250	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Cont:Attic-Continuous	1.3	0.33	Light



Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERSAdministrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings 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, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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, rangehoods, 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.
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.
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.

* Refer to glossary.

National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening 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
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 device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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.
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).