# Nationwide House Energy Rating Scheme NatHERS Certificate No. #HR-A9EO3G-04

Generated on 24 May 2024 using Hero 4.0 (Chenath v3.21)

### **Property**

Address 1130 Pittwater Road, Collaroy, NSW, 2097

**Lot/DP** 1/121939

NCC Class\* 1a

Type New

### **Plans**

Main Plan 2-23-10
Prepared by MA/JG

### Construction and environment

Assessed floor area (m<sup>2</sup>)\* Exposure Type

Conditioned\* 282.4 Exposed

Unconditioned\* 21.2 NatHERS climate zone

Total 342.5 56 - Mascot AMO

Garage 38.9



# Accredited assessor

Name Paul Gradwell

Business name House Energy Certified

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**Phone** +61 410315381

Accreditation No. DMN/18/4423

Assessor Accrediting DMN

Organisation

**Declaration of interest** No Conflict of Interest



### **Thermal Performance**

Heating Cooling

38.5 22.9

MJ/m<sup>2</sup> MJ/m<sup>2</sup>

### 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 <a href="http://www.hero-software.com.au/pdf/HR-A9EO3G-04">http://www.hero-software.com.au/pdf/HR-A9EO3G-04</a>. When using either

om.au/pdf/HR-A9EO3G 04. When using either link, ensure you are visiting http://www.herosoftware.com.au



### 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.



#### **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?

## Window and glazed door type and performance

#### **Default\* windows**

Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
•	U-value*		lower limit	upper limit
Aluminium B SG Clear	6.70	0.70	0.66	0.73
Aluminium A DG Air Fill High Solar Gain low-E -Clear	4.30	0.47	0.45	0.49
Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.30	0.53	0.50	0.56
	Aluminium B SG Clear  Aluminium A DG Air Fill High Solar Gain low-E -Clear	Window Description  U-value*  Aluminium B SG Clear  6.70  Aluminium A DG Air Fill High Solar Gain low-E -Clear  4.30	Window DescriptionU-value*SHGC*Aluminium B SG Clear6.700.70Aluminium A DG Air Fill High Solar Gain low-E -Clear4.300.47	Window DescriptionMaximum U-value*SHGC*tolerance lower limitAluminium B SG Clear6.700.700.66Aluminium A DG Air Fill High Solar Gain low-E -Clear4.300.470.45

#### **Custom\* windows**

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

### Window and glazed door schedule

Location	Window	Window	Height	Width	Window	Opening	Orient-	Shading
Location	ID	no.	(mm)	(mm)	type	%	ation	device*

None



# Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
Bath L3	ALM-003-03 A	W16	600	1450	Awning	90	N	None
Bedroom 1	ALM-004-03 A	W25,26,27	2400	3600	Fixed	0	W	None
Bedroom 1	ALM-004-03 A	W24	800	3600	Fixed	0	W	None
Bedroom 2	ALM-003-03 A	W11	2200	1200	Awning	10	E	None
Bedroom 3	ALM-003-03 A	W15	2300	600	Awning	10	E	None
Bedroom 3	ALM-003-03 A	W14	2200	1200	Awning	10	W	None
ENS	ALM-003-03 A	W10	2700	900	Awning	10	W	OP-100%
ENS	ALM-004-03 A	W24	800	900	Fixed	0	W	OP-100%
ENS	ALM-003-03 A	W23	700	900	Awning	10	S	None
ENS Master	ALM-003-03 A	W17	700	1000	Awning	90	N	None
ENS Master	ALM-003-03 A	W25	600	1000	Awning	90	N	None
ENS Master	ALM-004-03 A	W19	2700	900	Fixed	0	E	None
ENS Master	ALM-002-01 A	W18	2700	600	Louvre	90	E	OP-100%
ENS Master	ALM-004-03 A	W25	900	1000	Fixed	0	E	None
Hall	ALM-004-03 A	W12&13	2600	2700	Fixed	0	N	None
Hall	ALM-003-03 A	W22	2000	1000	Awning	10	S	None
Hall	ALM-002-01 A	W21	2000	900	Louvre	10	S	None
Kitchen/Living	ALM-004-03 A	W08	3000	1000	Fixed	0	S	None
Kitchen/Living	ALM-004-03 A	W09	3000	1300	Fixed	0	S	None
Kitchen/Living	ALM-004-03 A	W24	3000	900	Fixed	0	S	None
Kitchen/Living	ALM-004-03 A	W04	3000	900	Fixed	0	N	None
Kitchen/Living	ALM-004-03 A	W05	3000	900	Fixed	0	N	None
Kitchen/Living	ALM-004-03 A	W06	3000	1000	Fixed	0	E	None
Kitchen/Living	ALM-004-03 A	D03	3000	5520	Sliding Door	45	E	None
Kitchen/Living	ALM-004-03 A	W07	3000	1000	Fixed	0	Е	None
Kitchen/Living	ALM-004-03 A	W03	3000	1350	Fixed	0	N	None



### Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient- ation	Shading device*
Kitchen/Living	ALM-004-03 A	W02	3000	1350	Fixed	0	N	None
Ldy	ALM-003-03 A	D02	2400	900	Hinged Door	90	E	None
Master	ALM-004-03 A	D06	2700	4000	Sliding Door	45	E	None
Master	ALM-004-03 A	W25	900	4000	Fixed	0	E	None

# Roof window type and performance value

#### Default\* roof windows

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

#### **Custom\* roof windows**

Window ID Win	Window Description	Maximum	SHGC*	SHGC substitution tolerance ranges	
	•	U-value*		lower limit	upper limit
VEL-011-01 W	FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

### Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient- ation	Outdoor shade	Indoor shade
Hall	VEL-011-01 W	SKYL02	0	800	1400	S	None	None
Kitchen/Living	VEL-011-01 W	SKYL03	0	500	1300	N	None	None

# Skylight type and performance

Skylight ID	Skylight description
GEN-04-005a	Double-glazed Opal Skylight

# Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient- ation	Outdoor shade	Diffuser	Shaft Reflectance
Hall	GEN-04-005a	SKYL01	900	1.12	S	None	Yes	80

### External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2800	5000	90	W



### External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	870	90	W

# External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
CAV-BRICK-110-110-PB-A	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.25	Light (White)	1.14	No
CAV-BRICK-110-110-PB-B	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.50	Medium	1.14	No
MC-NOCAV	Metal Clad Direct-Fix (No Cavity) Stud Wall	0.85	Dark	2.50	No

### External wall schedule

Bath L3         MC-NOCAV         2700         1563         N         Yes           Bedroom 1         MC-NOCAV         3800         4521         W         200         No           Bedroom 1         MC-NOCAV         3600         4300         N         600         Yes           Bedroom 2         MC-NOCAV         2700         3632         N         695         No           Bedroom 2         MC-NOCAV         2700         2691         E         Yes           Bedroom 3         MC-NOCAV         2700         3138         N         525         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         6522         N         602         Yes           ENS Master	Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 1         MC-NOCAV         3600         4300         N         600         Yes           Bedroom 2         MC-NOCAV         2700         3632         N         695         No           Bedroom 2         MC-NOCAV         2700         2691         E         Yes           Bedroom 3         MC-NOCAV         2700         1443         E         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bath L3	MC-NOCAV	2700	1563	N		Yes
Bedroom 2         MC-NOCAV         2700         3632         N         695         No           Bedroom 2         MC-NOCAV         2700         2691         E         Yes           Bedroom 3         MC-NOCAV         2700         1443         E         Yes           Bedroom 3         MC-NOCAV         2700         3138         N         525         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 1	MC-NOCAV	3800	4521	W	200	No
Bedroom 2         MC-NOCAV         2700         2691         E         Yes           Bedroom 3         MC-NOCAV         2700         1443         E         Yes           Bedroom 3         MC-NOCAV         2700         3138         N         525         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 1	MC-NOCAV	3600	4300	N	600	Yes
Bedroom 3         MC-NOCAV         2700         1443         E         Yes           Bedroom 3         MC-NOCAV         2700         3138         N         525         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 2	MC-NOCAV	2700	3632	N	695	No
Bedroom 3         MC-NOCAV         2700         3138         N         525         Yes           Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 2	MC-NOCAV	2700	2691	E		Yes
Bedroom 3         MC-NOCAV         2700         2130         W         Yes           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 3	MC-NOCAV	2700	1443	E		Yes
Cellar         CAV-BRICK-110-110-PB-A         2700         1999         N         No           Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 3	MC-NOCAV	2700	3138	N	525	Yes
Cellar         CAV-BRICK-110-110-PB-A         2700         3625         E         No           Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Bedroom 3	MC-NOCAV	2700	2130	W		Yes
Cellar         CAV-BRICK-110-110-PB-A         2700         1999         S         No           ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Cellar	CAV-BRICK-110-110-PB-A	2700	1999	N		No
ENS         MC-NOCAV         3800         1799         W         200         No           ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Cellar	CAV-BRICK-110-110-PB-A	2700	3625	E		No
ENS         MC-NOCAV         3600         3001         S         601         No           ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	Cellar	CAV-BRICK-110-110-PB-A	2700	1999	S		No
ENS Master         MC-NOCAV         3600         6522         N         602         Yes           ENS Master         MC-NOCAV         4000         1725         E         1301         Yes	ENS	MC-NOCAV	3800	1799	W	200	No
ENS Master MC-NOCAV 4000 1725 E 1301 Yes	ENS	MC-NOCAV	3600	3001	S	601	No
	ENS Master	MC-NOCAV	3600	6522	N	602	Yes
Garage CAV-BRICK-110-110-PB-A 3000 6531 N Yes	ENS Master	MC-NOCAV	4000	1725	E	1301	Yes
	Garage	CAV-BRICK-110-110-PB-A	3000	6531	N		Yes
Garage CAV-BRICK-110-110-PB-A 3000 6030 S 1240 Yes	Garage	CAV-BRICK-110-110-PB-A	3000	6030	S	1240	Yes



### External wall schedule

Garage         CAV-BRICK-110-110-PB-A         3000         6061         W         Yes           Hall         MC-NOCAV         4100         3241         N         Yes           Hall         MC-NOCAV         2700         13210         S         596         Yes           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         7830         S         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         4120         W         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         3529         N         No           Kitchen/Living         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E	Location	Wall ID	Height (mm)	Width (mm)	Orient- ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Hall         MC-NOCAV         2700         13210         S         596         Yes           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         7830         S         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         4120         W         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         3529         N         No           Kitchen/Living         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000	Garage	CAV-BRICK-110-110-PB-A	3000	6061	W		Yes
Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         7830         S         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         4120         W         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         3529         N         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743 <td>Hall</td> <td>MC-NOCAV</td> <td>4100</td> <td>3241</td> <td>N</td> <td></td> <td>Yes</td>	Hall	MC-NOCAV	4100	3241	N		Yes
Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         4120         W         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         3529         N         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650 <td>Hall</td> <td>MC-NOCAV</td> <td>2700</td> <td>13210</td> <td>S</td> <td>596</td> <td>Yes</td>	Hall	MC-NOCAV	2700	13210	S	596	Yes
Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         3529         N         No           Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes	Hallway Cellar	CAV-BRICK-110-110-PB-B	2700	7830	S		No
Hallway Cellar         CAV-BRICK-110-110-PB-B         2700         451         E         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Hallway Cellar	CAV-BRICK-110-110-PB-B	2700	4120	W		No
Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         17671         S         No           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Hallway Cellar	CAV-BRICK-110-110-PB-B	2700	3529	N		No
Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         10682         N         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Hallway Cellar	CAV-BRICK-110-110-PB-B	2700	451	Е		No
Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         7290         E         2894         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Kitchen/Living	CAV-BRICK-110-110-PB-A	3000	17671	S		No
Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         1229         W         7621         Yes           Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Kitchen/Living	CAV-BRICK-110-110-PB-A	3000	10682	N		Yes
Kitchen/Living         CAV-BRICK-110-110-PB-A         3000         3470         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Kitchen/Living	CAV-BRICK-110-110-PB-A	3000	7290	E	2894	Yes
Ldy         CAV-BRICK-110-110-PB-A         3000         2634         N         Yes           Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Kitchen/Living	CAV-BRICK-110-110-PB-A	3000	1229	W	7621	Yes
Ldy         CAV-BRICK-110-110-PB-A         3000         2692         E         Yes           Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Kitchen/Living	CAV-BRICK-110-110-PB-A	3000	3470	N		Yes
Master         MC-NOCAV         4000         4743         E         1300         Yes           Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Ldy	CAV-BRICK-110-110-PB-A	3000	2634	N		Yes
Master         MC-NOCAV         2700         1650         N         600         Yes           Master         MC-NOCAV         3600         4831         S         596         Yes	Ldy	CAV-BRICK-110-110-PB-A	3000	2692	E		Yes
Master MC-NOCAV 3600 4831 S 596 Yes	Master	MC-NOCAV	4000	4743	E	1300	Yes
	Master	MC-NOCAV	2700	1650	N	600	Yes
Master MC-NIOCAV 2700 1074 W Yes	Master	MC-NOCAV	3600	4831	S	596	Yes
IVIOSICI IVI	Master	MC-NOCAV	2700	1074	W		Yes
Master MC-NOCAV 2700 3417 S 598 Yes	Master	MC-NOCAV	2700	3417	S	598	Yes
Mud CAV-BRICK-110-110-PB-A 3000 1370 S Yes	Mud	CAV-BRICK-110-110-PB-A	3000	1370	S		Yes
Pantry CAV-BRICK-110-110-PB-A 3000 1659 N Yes	Pantry	CAV-BRICK-110-110-PB-A	3000	1659	N		Yes
Pantry CAV-BRICK-110-110-PB-A 3000 2581 W Yes	Pantry	CAV-BRICK-110-110-PB-A	3000	2581	W		Yes
Wellness CAV-BRICK-110-110-PB-A 2700 3998 N No	Wellness	CAV-BRICK-110-110-PB-A	2700	3998	N		No

# Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk
Wall ID	wan Type	Alea (III )	insulation



# Internal wall type

Wall ID	Wall Type	Area (m²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	110.7	0.00
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	25.4	2.50
SGL-BRICK-110-REND	Single 110mm Brick Wall - Rendered Both Sides	71.3	0.00

# Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath L2	CSOG-100: Concrete Slab on Ground (100mm)	3.1	N/A	0.00	Tile (8mm)
Bath L3	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	6.4	N/A	0.00	Tile (8mm)
Bedroom 1	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	20.1	N/A	4.00	Timber (12mm)
Bedroom 2	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	13.0	N/A	0.00	Timber (12mm)
Bedroom 2	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	3.2	N/A	4.00	Timber (12mm)
Bedroom 3	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	15.0	N/A	0.00	Timber (12mm)
Cellar	CSOG-100: Concrete Slab on Ground (100mm)	7.2	N/A	0.00	Exposed
ENS	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	2.8	N/A	4.00	Tile (8mm)
ENS	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	2.6	N/A	1.10	Tile (8mm)
ENS Master	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	10.1	N/A	0.00	Tile (8mm)
ENS Master	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	1.1	N/A	1.10	Tile (8mm)
Garage	CSOG-100: Concrete Slab on Ground (100mm)	38.9	N/A	0.00	Exposed
Hall	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	1.0	N/A	4.00	Timber (12mm)
Hall	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	26.3	N/A	0.00	Timber (12mm)
Hall	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	3.3	N/A	1.10	Timber (12mm)
Hallway Cellar	CSOG-100: Concrete Slab on Ground (100mm)	18.3	N/A	0.00	Exposed
Kitchen/Living	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	35.8	N/A	0.00	Timber (12mm)
Kitchen/Living	CSOG-100: Concrete Slab on Ground (100mm)	71.0	N/A	0.00	Timber (12mm)
Ldy	CSOG-100: Concrete Slab on Ground (100mm)	7.5	N/A	0.00	Tile (8mm)



# Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Master	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	42.3	N/A	1.10	Timber (12mm)
Mud	CSOG-100: Concrete Slab on Ground (100mm)	2.6	N/A	0.00	Tile (8mm)
Pantry	CSOG-100: Concrete Slab on Ground (100mm)	4.3	N/A	0.00	Stone
Wellness	CSOG-100: Concrete Slab on Ground (100mm)	10.4	N/A	0.00	Exposed

# Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bath L3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	4.00	Yes
Bedroom 1	FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	2.50	Yes
Bedroom 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	4.00	Yes
Bedroom 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	4.00	Yes
ENS	FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	2.50	Yes
ENS Master	FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	2.50	Yes
Garage	SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	0.00	No
Hall	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	4.00	Yes
Hall	FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	2.50	Yes
Kitchen/Living	SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
Ldy	SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	0.00	No
Master	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	4.00	Yes
Master	FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	2.50	Yes
Pantry	SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	0.00	No



# Ceiling penetrations\*

Location	Quantity	Туре	Diameter (mm)	Sealed /unsealed
Bath L2	2	Downlight	150	Sealed
Bath L2	1	Exhaust Fan	250	Sealed
Bath L3	1	Exhaust Fan	250	Sealed
Bath L3	3	Downlight	150	Sealed
Bedroom 1	8	Downlight	150	Sealed
Bedroom 2	6	Downlight	150	Sealed
Bedroom 3	6	Downlight	150	Sealed
Cellar	3	Downlight	150	Sealed
ENS	1	Exhaust Fan	250	Sealed
ENS	3	Downlight	150	Sealed
ENS Master	1	Exhaust Fan	250	Sealed
ENS Master	5	Downlight	150	Sealed
Garage	16	Downlight	150	Sealed
Hall	13	Downlight	150	Sealed
Hallway Cellar	10	Downlight	150	Sealed
Kitchen/Living	42	Downlight	150	Sealed
Ldy	1	Exhaust Fan	250	Sealed
Ldy	2	Downlight	150	Sealed
Master	19	Downlight	150	Sealed
Mud	2	Downlight	150	Sealed
Pantry	2	Downlight	150	Sealed
Wellness	5	Downlight	150	Sealed

# Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200



# Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.30	0.85	Dark
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	1.30	0.85	Dark
FLAT-02: Flat Framed / Skillion Metal Roof & Cathedral PB Ceiling (11°-33°)	1.30	0.85	Dark
SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	4.10	0.50	Medium



### **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 NatHERS Administrator. 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**

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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.
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).