Nationwide House Energy Rating Scheme
NatHERS Certificate No. #HR-HQLQHZ-01

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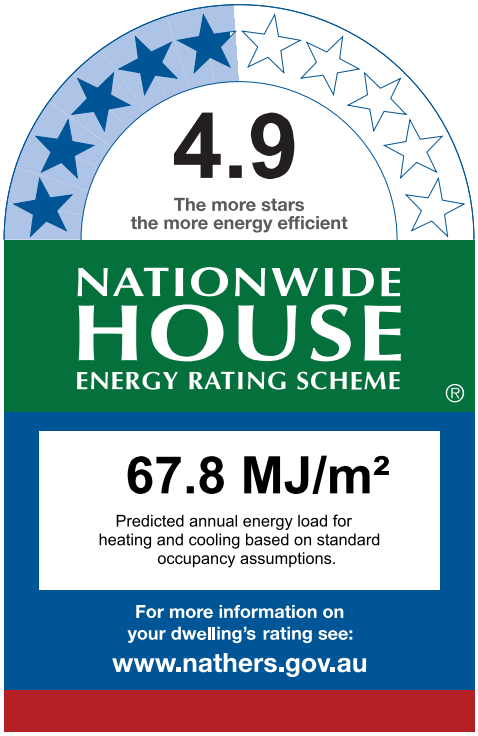

Property

Address	100 Hilltop Road, Clareville, NSW, 2107
Lot/DP	LOT 2 DP 260241
NCC Class*	1a
Type	New

Plans

Main Plan	23-05-22
Prepared by	

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	252.1	Open	
Unconditioned*	29.1	**NatHERS climate zone**	
Total	281.2	56 - Mascot AMO	
Garage	0.0		

Accredited assessor

Name	Adam Clarke
Business name	10 Star Building Assessments
Email	admin@10sba.com
Phone	+61 481010999
Accreditation No.	101518
Assessor Accrediting Organisation	ABSA
Declaration of interest	No Conflict of Interest

Thermal Performance

Heating	Cooling
44.5	**23.2**
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 http://www.hero-software.com.au/pdf/HR-HQLQHZ-01. When using either link, ensure you are visiting http://www.hero-software.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.

* Refer to glossary.

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?

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

NCC 2019 Vol 2 - 3.9.2.6 Protection of openable windows – bedrooms (a) A window opening in a bedroom must be provided with protection, where the floor below the window is 2 m or more above the surface beneath.
(b) Where the lowest level of the window opening covered by (a) is less than 1.7 m above the floor, the window opening must comply with the following:
(i) The openable portion of the window must be protected with (A) a device capable of restricting the window opening; or (B) a screen with secure fittings.
NCC 2019 Vol 2 - 3.9.2.7 Protection of openable windows - rooms other than bedrooms (a) A window opening in a room other than a bedroom must be provided with protection where the floor below the window is 4 m or more above the surface beneath.
(b) The openable part of the window covered by (a) must be protected with a barrier with a height of not less than 865 mm above the floor.

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
AWS-003-06 A	502/504 Al Sliding Window DG 5SG/8Ar/5ET	3.57	0.33	0.31	0.35
AWS-013-06 A	541/542 Al Sliding Door DG 5SG/8Ar/5ET	3.33	0.34	0.32	0.36

* Refer to glossary.

AWS-019-06 A	549 ED Al Entry Door DG 5SG/8Ar/5ET	3.52	0.28	0.27	0.29
AWS-067-13 A	RES SERIES 516 FIXED WINDOW DG 5_LightBridge_ClrPrvSI_638-10-4	2.17	0.39	0.37	0.41

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BATH	AWS-003-06 A	108W	1300	1200	Sliding	45	SE	None
BATH 1	AWS-003-06 A	312W	1290	900	Sliding	45	SE	None
BATH 1	ALM-004-01 A	310W	660	2460	Fixed	0	SE	None
BED 1	AWS-003-06 A	304W	1200	2400	Sliding	10	NW	None
BED 1	AWS-067-13 A	305W	1200	1100	Fixed	0	NE	None
BED 2	AWS-003-06 A	306W	1200	2400	Sliding	10	NW	None
BED 3	AWS-003-06 A	101W	1200	1800	Sliding	10	SW	None
BED 4	AWS-013-06 A	104D	2100	2100	Sliding	45	NW	None
BED 5	AWS-013-06 A	105D	2100	2100	Sliding	45	NW	None
ENTRY	AWS-067-13 A	307W	1200	1200	Fixed	0	NW	None
ENTRY	AWS-003-06 A	309W-1	500	1060	Sliding	45	SE	None
ENTRY	ALM-004-01 A	309W-2	1760	1060	Fixed	0	SE	None
ENTRY	ALM-004-01 A	308W	1260	2260	Fixed	0	NE	None
Ensuite	AWS-003-06 A	301W	1200	1500	Sliding	45	SW	None
Ensuite	ALM-004-01 A	311W	660	2460	Fixed	0	SE	None
FAMILY / GAMES	AWS-013-06 A	103D	2400	4200	Sliding	45	NW	None
FAMILY / GAMES	AWS-019-06 A	109D-B	2100	810	Casement	90	SE	None
FAMILY / GAMES	AWS-019-06 A	109D-A	2100	810	Casement	90	SE	None
FAMILY / GAMES	AWS-003-06 A	102W	1000	2100	Sliding	45	SW	None
Kit / Liv	AWS-013-06 A	202D	2400	4800	Sliding	45	NW	None
Kit / Liv	AWS-003-06 A	203W	1500	1500	Sliding	45	NW	None
Kit / Liv	ALM-004-01 A	204W	1290	1090	Fixed	0	NE	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kit / Liv	AWS-003-06 A	205W	1290	1690	Sliding	45	NE	None
Living	AWS-013-06 A	201D	2400	4800	Sliding	45	NW	None
Living	AWS-003-06 A	209W	690	1690	Sliding	45	SW	None
Store	AWS-003-06 A	206W	1200	600	Sliding	45	NE	None
WC	AWS-003-06 A	207W	900	1050	Sliding	45	SW	None
WIR	AWS-067-13 A	303W	1200	750	Fixed	0	NW	None
WIR	AWS-019-06 A	302W	1200	800	Casement	90	SW	None
hallway	AWS-003-06 A	106W	1500	900	Sliding	45	NE	None
hallway	ALM-004-01 A	107W	1290	1090	Fixed	0	NE	None
ldry	AWS-003-06 A	208W	1200	900	Sliding	45	SW	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
VEL-011-01 W	VELUX 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
Kit / Liv	VEL-011-01 W	SKYRW 01	80	861	1995	N	None	Holland Blind
Kit / Liv	VEL-011-01 W	SKYRW 02	80	834	2008	N	None	Holland Blind

Skylight *type and performance*

Skylight ID	Skylight description
None	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
ENTRY	2040	1200	90	SE
Store	2040	820	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
CONCBLOCK-190-FCF-PB1-A	Concrete Block 190mm Fully Core-Filled - Cavity Plasterboard Internally	0.45	Medium (Shale Grey Matt)	1.00	No
CONCBLOCK-190-FCF-PB1-B	Concrete Block 190mm Fully Core-Filled - Cavity Plasterboard Internally	0.62	Dark (Concrete)	1.00	No
CONCBLOCK-190-FCF-PB1-C	Concrete Block 190mm Fully Core-Filled - Cavity Plasterboard Internally	0.50	Medium	1.00	No
HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel Battened (Refl Cavity) Stud Wall	0.45	Medium (Shale Grey Matt)	2.70	Yes
HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-B	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel Battened (Refl Cavity) Stud Wall	0.50	Medium	2.70	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	2621	SE	5320	Yes
BATH 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2450	3010	SE	4156	Yes
BATH 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	760	2975	SE	439	Yes
BATH 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-B	570	2975	SE		No
BED 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2450	3291	NW	521	No
BED 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2560	1500	NE	586	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2560	1500	SW	597	Yes
BED 2	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2670	4001	NW	548	Yes
BED 3	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	2208	SE	3682	Yes
BED 3	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3591	SW		Yes
BED 3	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	1492	SE	1788	Yes
BED 4	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3641	NW	978	Yes
BED 5	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3630	NW	978	Yes
BED 5	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	2681	NE		Yes
BED 5	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	220	NE		Yes
BED 5	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	819	NE		Yes
ENTRY	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2670	1470	NW	548	Yes
ENTRY	CONCBLOCK-190-FCF-PB1-C	2670	1774	NW		Yes
ENTRY	CONCBLOCK-190-FCF-PB1-B	2920	1710	NE		Yes
ENTRY	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2450	4224	SE	4156	Yes
ENTRY	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	760	4163	SE	462	Yes
ENTRY	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-B	570	4163	SE		No
ENTRY	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	3325	4900	NE	558	Yes
Ensuite	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2450	4740	SE	4156	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Ensuite	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	3580	1900	SW	563	Yes
Ensuite	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	760	4727	SE	436	Yes
Ensuite	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-B	570	4727	SE		No
FAMILY / GAMES	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	5600	NW	3547	Yes
FAMILY / GAMES	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	1790	SE	5320	Yes
FAMILY / GAMES	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	4050	SW		Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	7339	NW	1005	Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1385	NE	549	Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1321	NE	600	Yes
Kit / Liv	CONCBLOCK-190-FCF-PB1-B	2810	1825	NE		Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	2360	SE	3908	Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1490	SW	6299	Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1900	NE	600	Yes
Kit / Liv	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1679	NE		Yes
Living	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	5624	NW	4914	Yes
Living	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	4600	SW		Yes
Living	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	900	SE		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Store	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1516	NE	600	Yes
Store	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	2379	SE	2288	Yes
WC	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	980	SE	2598	Yes
WC	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1206	SW	5980	Yes
WC	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1520	SE	2288	Yes
WC	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	310	SW	6960	Yes
WIR	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2670	2220	NW	548	Yes
WIR	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	3050	4597	SW	534	Yes
WIR	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	3430	900	SE	525	Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3597	SE	5321	Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3864	SW	7465	Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	1039	SE	1458	Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	1076	NE	603	Yes
hallway	CONCBLOCK-190-FCF-PB1-A	2710	1785	NE		Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	1282	NE	609	Yes
hallway	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2710	3660	NE		Yes
ldry	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	4740	SE		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
ldry	HardieTex™, EasyLap™, EasyTex™ and Matrix™ panel-REFL-CAV11-A	2810	1900	SW		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
CONC - 200MM	CONCRETE 200MM	37.6	0.00
INT-PB	Internal Plasterboard Stud Wall	113.4	0.00
INT-PB	Internal Plasterboard Stud Wall	84.6	1.50
INT-PB	Internal Plasterboard Stud Wall	0.0	2.70

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-001: Suspended Timber Floor	7.2	N/A	3.50	Tile
BATH 1	TIMB-001: Suspended Timber Floor	5.7	N/A	0.15	Tile
BED 1	TIMB-002: Suspended Timber Floor - Lined Below	15.1	N/A	0.15	Carpet
BED 1	TIMB-002: Suspended Timber Floor - Lined Below	4.9	N/A	3.50	Carpet
BED 2	TIMB-001: Suspended Timber Floor	12.8	N/A	0.15	Carpet
BED 3	TIMB-001: Suspended Timber Floor	13.3	N/A	3.50	Carpet
BED 4	TIMB-001: Suspended Timber Floor	13.5	N/A	3.50	Carpet
BED 5	TIMB-001: Suspended Timber Floor	13.5	N/A	3.50	Carpet
ENTRY	TIMB-001: Suspended Timber Floor	28.7	N/A	0.15	Timber
Ensuite	TIMB-002: Suspended Timber Floor - Lined Below	9.0	N/A	0.15	Tile
FAMILY / GAMES	TIMB-001: Suspended Timber Floor	29.3	N/A	3.50	Timber
Kit / Liv	TIMB-001: Suspended Timber Floor	35.2	N/A	0.15	Timber
Kit / Liv	TIMB-001: Suspended Timber Floor	24.3	N/A	3.50	Timber
Living	TIMB-001: Suspended Timber Floor	15.4	N/A	0.15	Timber
Living	TIMB-001: Suspended Timber Floor	10.5	N/A	3.50	Timber
Store	TIMB-001: Suspended Timber Floor	3.6	N/A	3.50	Timber

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
WC	TIMB-001: Suspended Timber Floor	3.5	N/A	3.50	Tile
WIR	TIMB-001: Suspended Timber Floor	10.2	N/A	0.15	Carpet
hallway	TIMB-001: Suspended Timber Floor	25.3	N/A	3.50	Timber
ldry	TIMB-001: Suspended Timber Floor	9.0	N/A	3.50	Tile

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	No
BATH 1	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
BED 1	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
BED 2	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
BED 3	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	6.00	No
BED 4	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	6.00	No
BED 5	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	6.00	No
ENTRY	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
Ensuite	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
FAMILY / GAMES	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	6.00	No
Kit / Liv	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	No
Store	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.00	No
WC	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.00	No
WIR	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	Yes
hallway	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	6.00	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	350	Sealed
BATH	1	Downlight	200	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH 1	1	Exhaust Fan	350	Sealed
BATH 1	1	Downlight	200	Sealed
BED 1	2	Downlight	200	Sealed
BED 2	1	Downlight	200	Sealed
BED 3	1	Downlight	200	Sealed
BED 4	1	Downlight	200	Sealed
BED 5	1	Downlight	200	Sealed
ENTRY	4	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	200	Sealed
FAMILY / GAMES	2	Downlight	200	Sealed
Kit / Liv	1	Exhaust Fan	350	Sealed
Kit / Liv	7	Downlight	200	Sealed
Living	2	Downlight	200	Sealed
Store	1	Downlight	200	Sealed
WC	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed
hallway	2	Downlight	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
None		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	0.50	Medium
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	0.45	Medium (Shale Grey Matt)

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	1.30	0.45	Medium (Shale Grey Matt)
FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	0.00	0.45	Medium (Shale Grey Matt)
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.45	Medium (Shale Grey Matt)

* Refer to glossary.

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

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).

* Refer to glossary.