

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 759SNRQO3U

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Property

Address 184 Possum Creek Road, Possum Creek, NSW, 2479
Lot/DP -
NCC Class* Class 1a
Type New Home

Plans

Main plan DA/04/23_11_21
Prepared by AP

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 294.5	exposed
Unconditioned* 18.2	NatHERS climate zone
Total 312.7	10 Brisbane AMO
Garage -	



Accredited assessor

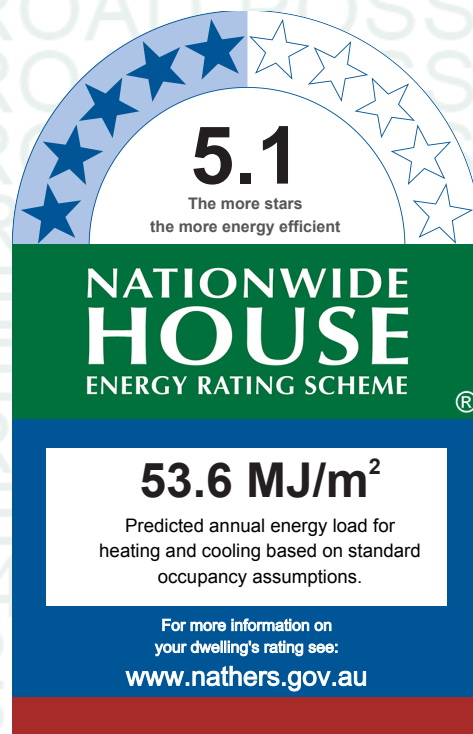
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Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

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
13.9	39.7
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=759SNRQO3U> 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?

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

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
PVC-001-03 W	uPVC A SG High Solar Gain Low-E	4.3	0.42	0.4	0.44

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
EBS-003-01 A	SLS BT90 TG 6mmClr-8Ar-6mmClr-6Ar-6mmClr	2.66	0.39	0.37	0.41

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Pantry	PVC-001-03 W	W0.02	1800	1000	louvre	90.0	ENE	No
Bed 01	EBS-003-01 A	W0.03	1800	3750	sliding	65.0	ENE	No
Ens 01	EBS-003-01 A	W0.04	1800	1900	sliding	45.0	ENE	No
Ens 02	EBS-003-01 A	W0.05	1800	1900	sliding	45.0	ENE	No

Bed 02	EBS-003-01 A	W0.07	1200	1200	fixed	0.0	SSE	No
Bed 02	EBS-003-01 A	W0.06	1800	3750	sliding	65.0	ENE	No
Bed 04	EBS-003-01 A	W0.08	1800	3750	sliding	65.0	WSW	No
Ens 04	EBS-003-01 A	W0.09	1800	1900	sliding	45.0	WSW	No
Ens 03	EBS-003-01 A	W0.10	1800	1900	sliding	45.0	WSW	No
Bed 03	EBS-003-01 A	W0.11	1800	3750	sliding	65.0	WSW	No
Hall	PVC-001-03 W	W0.16	1800	1000	louvre	90.0	NNW	No
Bunk Room	PVC-001-03 W	W0.15	1800	1800	louvre	90.0	NNW	No
Bunk Room	PVC-001-03 W	W0.13	1800	1800	louvre	90.0	WSW	No
Bunk Room	PVC-001-03 W	W0.12	1800	1800	louvre	90.0	SSE	No
Kitchen/Living	EBS-003-01 A	D0.09	2400	6890	sliding	75.0	WSW	No
Kitchen/Living	EBS-003-01 A	W0.01(F)	2400	5516	fixed	0.0	ENE	No
Kitchen/Living	EBS-003-01 A	W0.01 CS	1200	6895	fixed	0.0	ENE	No
Kitchen/Living	PVC-001-03 W	W0.01(L)	2400	1379	louvre	90.0	ENE	No
Kitchen/Living	EBS-003-01 A	W0.01 CS	1000	6895	fixed	0.0	ENE	No
Kitchen/Living	PVC-001-03 W	W0.18	1800	1800	louvre	90.0	NNW	No
Kitchen/Living	PVC-001-03 W	W0.17	1800	2850	louvre	90.0	NNW	No
Rumpus/Library	PVC-001-03 W	W0.14	2160	1800	louvre	0.0	WSW	No

Roof window type and performance value

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

Location	Window ID	Window no.	Opening %	Area (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
Bed 01	1800	600	100.0	WSW
Bed 01	1800	600	100.0	WSW
Bed 01	1800	600	100.0	WSW
Bed 01	2400	1200	100.0	SSE
Bed 02	2400	1200	100.0	NNW
Bed 02	1800	600	100.0	WSW
Bed 02	1800	600	100.0	WSW
Bed 02	1800	600	100.0	WSW
Store/Services	2100	1018	100.0	ENE
Bed 04	1800	600	100.0	ENE
Bed 04	1800	600	100.0	ENE
Bed 04	1800	600	100.0	ENE
Bed 04	2400	1200	100.0	NNW
Bed 03	2400	1200	100.0	SSE
Bed 03	1800	600	100.0	ENE
Bed 03	1800	600	100.0	ENE
Bed 03	1800	600	100.0	ENE
Laundry	2400	1200	100.0	ENE
Hall	2400	1500	100.0	ENE
Rumpus/Library	1800	1800	90.0	ENE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	PosCrDw - FC / Hardwood	0.2	Light	Rockwool batt (k = 0.033) (R2.7)	No
2	PosCrDw - Brick Veneer	0.2	Light	Rockwool batt (k = 0.033) (R2.7)	No
3	PosCrDw - Cast Concrete	0.2	Light	Rockwool batt (k = 0.033) (R2.7)	No
4	PosCrDw - Metal / Hardwood	0.2	Light	Rockwool batt (k = 0.033) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Pantry	1	2400	2648	ENE	9174	Yes
Pantry	2	2400	2649	WSW	1704	Yes
Bed 01	2	2400	6152	WSW	1710	Yes
Bed 01	2	2400	1902	SSE	1480	Yes



Bed 01	1	2400	3956	ENE	0	Yes
Ens 01	2	2400	2647	SSE	1465	Yes
Ens 01	1	2400	2155	ENE	0	Yes
Ens 02	2	2400	2669	NNW	1469	Yes
Ens 02	1	2400	2172	ENE	0	Yes
Bed 02	2	2400	1866	NNW	1479	Yes
Bed 02	2	2400	6219	WSW	1723	Yes
Bed 02	3	2400	4588	SSE	0	No
Bed 02	1	2400	4007	ENE	0	Yes
Store/Services	1	2400	2507	WSW	0	Yes
Store/Services	3	2400	4473	SSE	7981	Yes
Store/Services	2	2400	2507	ENE	1700	Yes
Bed 04	2	2400	6169	ENE	1695	Yes
Bed 04	2	2400	1856	NNW	1650	Yes
Bed 04	1	2400	3973	WSW	0	Yes
Ens 04	2	2400	2583	NNW	1654	Yes
Ens 04	1	2400	2158	WSW	0	Yes
Ens 03	1	2400	2160	WSW	0	Yes
Ens 03	2	2400	2579	SSE	1654	Yes
Bed 03	2	2400	1848	SSE	1637	Yes
Bed 03	2	2400	6146	ENE	1706	Yes
Bed 03	1	2400	3922	WSW	0	Yes
Laundry	4	2400	2244	ENE	8728	Yes
Hall	4	2400	4663	ENE	8739	Yes
Hall	4	2400	3076	NNW	1178	Yes
Bunk Room	4	2400	4805	NNW	1186	Yes
Bunk Room	4	2400	6956	WSW	1532	No
Bunk Room	4	2400	3468	SSE	1178	Yes
Kitchen/Living	4	3600	6920	WSW	8745	Yes
Kitchen/Living	4	1000	6920	WSW	0	Yes
Kitchen/Living	4	1200	4611	SSE	1160	No
Kitchen/Living	4	3600	7365	SSE	1197	Yes
Kitchen/Living	4	3600	6921	ENE	1806	No
Kitchen/Living	4	1000	6921	ENE	1788	No
Kitchen/Living	4	3600	7172	NNW	1217	Yes
Kitchen/Living	4	1800	585	ENE	8978	Yes
Kitchen/Living	4	1800	2851	NNW	629	No
Kitchen/Living	4	600	2851	NNW	556	No
Kitchen/Living	4	1200	2851	NNW	556	No
Kitchen/Living	4	1800	587	WSW	10700	Yes
Kitchen/Living	4	3600	1948	NNW	1240	Yes

Void W	4	1000	4802	NNW	1152	No
Void W	4	1350	1519	WSW	1493	No
Rumpus/Library	4	2160	5413	WSW	1493	No
Rumpus/Library	4	1000	7942	SSE	1136	No
Rumpus/Library	4	2160	5409	ENE	8726	Yes
Void E	4	1000	3073	NNW	1143	No
Void E	4	1350	1521	ENE	8720	Yes

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
1	PosCrDw - Int. Hardwood / Hardwood	155.1	

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Pantry	PosCrDw - CSOG: Slab on Ground	12.2	Enclosed	R0.0	Tiles
Bed 01	PosCrDw - CSOG: Slab on Ground	22.4	Enclosed	R0.0	Tiles
Ens 01	PosCrDw - CSOG: Slab on Ground	5.7	Enclosed	R0.0	Tiles
Ens 02	PosCrDw - CSOG: Slab on Ground	5.8	Enclosed	R0.0	Tiles
Bed 02	PosCrDw - CSOG: Slab on Ground	22.5	Enclosed	R0.0	Tiles
Store/Services	PosCrDw - CSOG: Slab on Ground	11.2	Enclosed	R0.0	none
Bed 04	PosCrDw - CSOG: Slab on Ground	21.9	Enclosed	R0.0	Tiles
Ens 04	PosCrDw - CSOG: Slab on Ground	5.6	Enclosed	R0.0	Tiles
Ens 03	PosCrDw - CSOG: Slab on Ground	5.6	Enclosed	R0.0	Tiles
Bed 03	PosCrDw - CSOG: Slab on Ground	21.7	Enclosed	R0.0	Tiles
Laundry	PosCrDw - CSOG: Slab on Ground	7	Enclosed	R0.0	Tiles
Hall	PosCrDw - CSOG: Slab on Ground	7.7	Enclosed	R0.0	Tiles
Shower	PosCrDw - CSOG: Slab on Ground	1.6	Enclosed	R0.0	Tiles
WC	PosCrDw - CSOG: Slab on Ground	1.6	Enclosed	R0.0	Tiles
Bathroom	PosCrDw - CSOG: Slab on Ground	5.2	Enclosed	R0.0	Tiles
Bunk Room	PosCrDw - CSOG: Slab on Ground	31.3	Enclosed	R0.0	Tiles
Kitchen/Living	PosCrDw - 200mm Susp. Conc. Slab	9.4	Open	R0.0	Tiles
Kitchen/Living	PosCrDw - CSOG: Slab on Ground	75.1	Enclosed	R0.0	Tiles
Void W	No Floor	7.3	Enclosed	R0.0	No Floor
Rumpus/Library	PosCrDw - Timber	43	Enclosed	R0.0	Tiles
Void E	No Floor	4.7	Enclosed	R0.0	No Floor

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Pantry	Plasterboard	R4.3	No
Bed 01	Plasterboard	R4.3	No
Ens 01	Plasterboard	R4.3	No

Ens 02	Plasterboard	R4.3	No
Bed 02	Plasterboard	R4.3	No
Store/Services	Plasterboard	R4.3	No
Bed 04	Plasterboard	R4.3	No
Ens 04	Plasterboard	R4.3	No
Ens 03	Plasterboard	R4.3	No
Bed 03	Plasterboard	R4.3	No
Laundry	PosCrDw - Timber	R0.0	No
Hall	PosCrDw - Timber	R0.0	No
Shower	PosCrDw - Timber	R0.0	No
WC	PosCrDw - Timber	R0.0	No
Bathroom	PosCrDw - Timber	R0.0	No
Bunk Room	PosCrDw - CSOG: Slab on Ground	R0.0	No
Bunk Room	PosCrDw - Timber	R0.0	No
Kitchen/Living	Plasterboard	R4.3	No
Kitchen/Living	Plasterboard	R4.3	No
Void W	Plasterboard	R4.3	No
Rumpus/Library	Plasterboard	R4.3	No
Void E	Plasterboard	R4.3	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Pantry	4	Downlights	50	Sealed
Bed 01	8	Downlights	50	Sealed
Ens 01	2	Downlights	50	Sealed
Ens 02	2	Downlights	50	Sealed
Bed 02	8	Downlights	50	Sealed
Store/Services	4	Downlights	50	Sealed
Bed 04	8	Downlights	50	Sealed
Ens 04	2	Downlights	50	Sealed
Ens 03	2	Downlights	50	Sealed
Bed 03	8	Downlights	50	Sealed
Laundry	2	Downlights	50	Sealed
Hall	1	Downlights	50	Sealed
Shower	1	Downlights	50	Sealed
WC	1	Downlights	50	Sealed
Bathroom	2	Downlights	50	Sealed
Bunk Room	8	Downlights	50	Sealed
Kitchen/Living	36	Downlights	50	Sealed
Kitchen/Living	1	Chimneys	600	Sealed
Void W	2	Downlights	50	Sealed
Rumpus/Library	16	Downlights	50	Sealed

* Refer to glossary.

Void E	2	Downlights	50	Sealed
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Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1400

Roof type

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

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).