

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-AJTNB2-02

Generated on 11 Mar 2023 using Hero 3.0.1

Property

Address Unit B, 43 ARAB ROAD, PADSTOW, NSW, 2211

Lot/DP

NCC Class* 1a

Type New

Plans

Main Plan

Prepared by P5

Construction and environment

Assessed floor area (m²)*

Conditioned* 157.5

Unconditioned* 4.7

Total 179.3

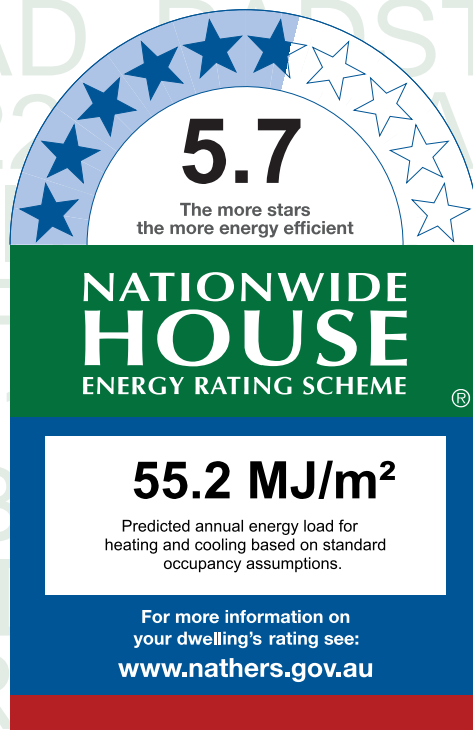
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Exposure Type

Suburban

NatHERS climate zone

56 - Mascot AMO



Thermal Performance

Heating

36.6

MJ/m²

Cooling

18.6

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-AJTNB2-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



Accredited assessor

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Declaration of interest No Conflict of Interest

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?

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
None					

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
DOW-001-01 A	Al Sliding Window SG 3Clr	6.38	0.75	0.71	0.79
DOW-002-01 A	Elite Al Awning Window SG 3Clr	6.36	0.65	0.62	0.68
DOW-006-01 A	Al Sliding Door SG 5Clr	6.16	0.71	0.67	0.75
DOW-007-01 A	Sliding Door DG 5-6-5	4.23	0.59	0.56	0.62
DOW-014-01 A	Aluminium Fixed Light Window SG 4Clr	6.16	0.75	0.71	0.79



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 2	DOW-001-01 A	W13	800	2000	Sliding	45	SW	None
BED 3	DOW-001-01 A	W15	500	2500	Sliding	45	SE	None
BED 3	DOW-001-01 A	W13	800	2000	Sliding	45	SW	None
BED 4	DOW-001-01 A	W11	500	1770	Sliding	45	SE	None
BED 5	DOW-001-01 A	W13	800	2000	Sliding	45	SW	None
DINING/KITCHEN	DOW-001-01 A	W16	600	3300	Sliding	30	SW	None
DINING/KITCHEN	DOW-007-01 A	D05	2700	2200	Sliding	90	SE	None
DINING/KITCHEN	DOW-007-01 A	D05	2700	2200	Sliding	90	SE	None
ENS-M	DOW-002-01 A	W02	2500	737	Awning	60	NW	None
ENTRY	DOW-014-01 A	W07	2700	948	Fixed	0	NW	None
ENTRY	DOW-006-01 A	D04	2680	1186	Casement	100	NW	OP-50%
MASTER	DOW-006-01 A	D06	2500	2400	Sliding	90	NW	None
MASTER	DOW-001-01 A	W12	800	1800	Sliding	45	SW	None
MASTER	DOW-001-01 A	W12	800	1800	Sliding	45	SW	None
Stting	DOW-014-01 A	W06	2500	943	Fixed	0	NW	OP-50%

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
DINING/KITCHEN	VEL-011-01 W	SKYRW 04	0	2700	1350	S	None	None

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GARAGE	2650	2893	90	NW
LDRY	2262	820	90	SW

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-NONREFL-CAV	Brick Veneer Stud Wall with Non-Reflective Sarking	0.50	Medium	2.50	No
FC-NOCAV	Fibre-Cement Clad Direct-Fix (No Cavity) Stud Wall	0.50	Medium	2.50	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	FC-NOCAV	2500	3781	SW		Yes
BED 3	FC-NOCAV	2500	3215	SE		No
BED 3	FC-NOCAV	2500	4292	SW		Yes
BED 4	FC-NOCAV	2500	2959	SE		No
BED 5	BV-NONREFL-CAV	3000	3484	SW		Yes
DINING/KITCHEN	BV-NONREFL-CAV	3570	4732	SW		Yes
DINING/KITCHEN	BV-NONREFL-CAV	3570	6334	SE	5453	Yes
ENS-M	FC-NOCAV	2500	1920	NW	1754	Yes
ENTRY	BV-NONREFL-CAV	3000	780	NE		Yes
ENTRY	BV-NONREFL-CAV	3000	3111	NW	582	Yes
ENTRY	BV-NONREFL-CAV	3000	1059	SW		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
ENTRY	BV-NONREFL-CAV	3000	279	NE		Yes
GARAGE	BV-NONREFL-CAV	3000	5436	SW		Yes
GARAGE	BV-NONREFL-CAV	3000	3144	NW	2751	Yes
LDRY	BV-NONREFL-CAV	3000	1481	SW		Yes
MASTER	FC-NOCAV	2500	3215	NW	2842	Yes
MASTER	FC-NOCAV	2700	5390	SW		Yes
Stting	FC-NOCAV	2500	955	NW		No

Internal wall *type*

Wall ID	Wall Type	Area (m ²)	Bulk insulation
CAV-BRICK-110-110-PB	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	78.9	0.00
INT-PB	Internal Plasterboard Stud Wall	23.4	2.50
INT-PB	Internal Plasterboard Stud Wall	128.4	0.00

Floor *type*

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-001: Suspended Timber Floor	5.5	N/A	0.15	Tile
BED 2	TIMB-001: Suspended Timber Floor	10.6	N/A	0.15	Carpet
BED 2	TIMB-001: Suspended Timber Floor	0.8	N/A	0.00	Carpet
BED 3	TIMB-001: Suspended Timber Floor	13.3	N/A	0.15	Carpet
BED 3	TIMB-001: Suspended Timber Floor	0.5	N/A	0.00	Carpet
BED 4	TIMB-001: Suspended Timber Floor	10.9	N/A	0.15	Carpet
BED 5	CSOG-100: Concrete Slab on Ground (100mm)	10.5	N/A	0.00	Carpet
DINING/KITCHEN	CSOG-100: Concrete Slab on Ground (100mm)	50.5	N/A	0.00	Tile
ENS-M	TIMB-001: Suspended Timber Floor	5.2	N/A	0.15	Tile
ENTRY	CSOG-100: Concrete Slab on Ground (100mm)	12.0	N/A	0.00	Tile
GARAGE	CSOG-100: Concrete Slab on Ground (100mm)	17.1	N/A	0.00	Exposed

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
LDRY	CSOG-100: Concrete Slab on Ground (100mm)	4.7	N/A	0.00	Tile
MASTER	TIMB-001: Suspended Timber Floor	17.3	N/A	0.15	Carpet
MASTER	TIMB-001: Suspended Timber Floor	0.7	N/A	0.00	Carpet
Stting	TIMB-001: Suspended Timber Floor	12.9	N/A	0.15	Carpet
Stting	TIMB-001: Suspended Timber Floor	0.3	N/A	0.00	Carpet
W.C	CSOG-100: Concrete Slab on Ground (100mm)	3.7	N/A	0.00	Tile
W.I.R_M	TIMB-001: Suspended Timber Floor	3.7	N/A	0.15	Carpet
W.I.R_M	TIMB-001: Suspended Timber Floor	0.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
BED 2	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
BED 3	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
BED 4	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
DINING/KITCHEN	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	No
ENS-M	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
ENTRY	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
MASTER	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
Stting	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes
W.I.R_M	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	3.50	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	100	Sealed
BATH	1	Exhaust Fan	350	Sealed
BED 2	2	Downlight	100	Sealed

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BED 3	2	Downlight	100	Sealed
BED 4	2	Downlight	100	Sealed
BED 5	2	Downlight	100	Sealed
DINING/KITCHEN	1	Exhaust Fan	350	Sealed
ENS-M	1	Downlight	100	Sealed
ENS-M	1	Exhaust Fan	350	Sealed
ENTRY	2	Downlight	100	Sealed
LDRY	1	Downlight	100	Sealed
MASTER	3	Downlight	100	Sealed
Stting	2	Downlight	100	Sealed
W.C	1	Exhaust Fan	350	Sealed
W.I.R_M	1	Downlight	100	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	1.30	0.71	Dark (Woodland Grey)
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	0.71	Dark (Woodland Grey)

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).