Nationwide House Energy Rating Scheme
NatHERS Certificate No. #HR-BYDX3N-02

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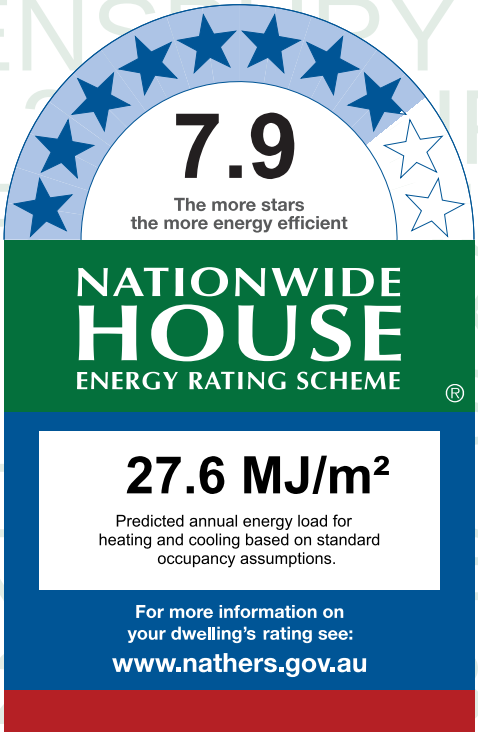

Property

Address	Unit 1B 29 Queensbury Rd, Queensbury Rd, Padstow, NSW, 2211
Lot/DP	
NCC Class*	1a
Type	New

Plans

Main Plan	DA Issue
Prepared by	JMJ Homes

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	266.2	Suburban	
Unconditioned*	5.6	**NatHERS climate zone**	
Total	292.9	56 - Mascot AMO	
Garage	21.0		

Thermal Performance

Heating	Cooling
19.0	**8.6**
MJ/m²	MJ/m²

Accredited assessor

Name	Tim Cunningham
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Accreditation No.	10243
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

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-BYDX3N-02. 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? 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 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
BRD-006-13 A	SIG Bi Fold Door (100mm) SG 638CPClr	4.49	0.50	0.47	0.53
BRD-020-12 A	Al Sliding Door SG 638CP	4.42	0.45	0.43	0.47
BRD-026-16 A	ESS Awning Window (52mm) SG 4EA	5.00	0.54	0.51	0.57
BRD-041-11 A	SIG Fixed Lite Externally Glazed (125mm) SG 638CPClr	4.23	0.60	0.57	0.63

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 2	BRD-026-16 A	W28	900	1500	Awning	45	SE	None
BED 3	BRD-026-16 A	W29	900	1500	Awning	45	SE	None
BED 4	BRD-026-16 A	W30	900	1500	Awning	45	SE	None
Bed 5	BRD-026-16 A	W11	1200	1500	Awning	45	SE	None
ENS 1	BRD-026-16 A	W26	900	1500	Awning	45	SE	None
ENS 4	BRD-026-16 A	W31	1800	610	Awning	90	NE	None
Garage	BRD-026-16 A	W10	1200	1500	Awning	45	SE	None
Kitchen/Living	BRD-006-13 A	D26	2400	4500	Bi-fold	90	NE	None
Kitchen/Living	BRD-041-11 A	W12	600	2400	Fixed	0	SE	None
Kitchen/Living	BRD-026-16 A	W13	1800	1000	Awning	90	SE	None
Kitchen/Living	BRD-026-16 A	W14	1800	1000	Awning	90	SE	None
LIVING	BRD-026-16 A	W27	900	2400	Awning	45	SE	None
MASTER	BRD-020-12 A	W24	2400	4500	Sliding	45	SW	None
STORAGE	BRD-026-16 A	W09	2400	600	Awning	60	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
None					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade

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 (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
BATH	GEN-04-005a	SKYLT 02	600	0.54	E	None	Yes	80

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2400	2700	90	SW
Laundry	2400	820	90	SE
STORAGE	2400	1200	90	SW

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.50	Yes
REN-BV-REFL-CAV	Rendered Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.50	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	BV-REFL-CAV	2700	3803	SE		No
BED 3	BV-REFL-CAV	2700	3802	SE		No
BED 4	BV-REFL-CAV	2700	4633	NE		No
BED 4	BV-REFL-CAV	2700	3929	SE		No
Bed 5	BV-REFL-CAV	2900	3599	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
ENS 1	BV-REFL-CAV	2700	1893	SE		No
ENS 4	BV-REFL-CAV	2700	1495	NE		No
Garage	BV-REFL-CAV	2900	6004	SE		Yes
Garage	REN-BV-REFL-CAV	2900	3501	SW	922	Yes
Kitchen/Living	BV-REFL-CAV	2900	6215	NE	4080	Yes
Kitchen/Living	BV-REFL-CAV	2900	12004	SE		Yes
LIVING	BV-REFL-CAV	2700	3223	SE		No
Laundry	BV-REFL-CAV	2900	1600	SE		Yes
MASTER	BV-REFL-CAV	2700	4750	SE		Yes
MASTER	REN-BV-REFL-CAV	2700	5915	SW	992	Yes
Pantry	BV-REFL-CAV	2900	1601	SE		Yes
STORAGE	REN-BV-REFL-CAV	2900	2604	SW	922	Yes
WIR	BV-REFL-CAV	2700	2303	SE		No
WIR	BV-REFL-CAV	2700	301	SW		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
CAV-BRICK-110-110-PB	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	137.0	2.50
INT-PB	Internal Plasterboard Stud Wall	207.0	0.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-002: Suspended Timber Floor - Lined Below	6.3	N/A	3.50	Tile (8mm)
BED 2	TIMB-002: Suspended Timber Floor - Lined Below	13.1	N/A	3.50	Carpet
BED 3	TIMB-002: Suspended Timber Floor - Lined Below	13.1	N/A	3.50	Carpet
BED 4	TIMB-002: Suspended Timber Floor - Lined Below	20.8	N/A	3.50	Carpet

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath	CSOG-150: Concrete Slab on Ground (150mm)	3.8	N/A	0.00	Tile (8mm)
Bed 5	CSOG-150: Concrete Slab on Ground (150mm)	12.6	N/A	0.00	Carpet
ENS 1	TIMB-002: Suspended Timber Floor - Lined Below	7.2	N/A	3.50	Tile (8mm)
ENS 4	TIMB-002: Suspended Timber Floor - Lined Below	5.1	N/A	3.50	Tile (8mm)
Garage	CSOG-150: Concrete Slab on Ground (150mm)	21.0	N/A	0.00	Exposed
Kitchen/Living	CSOG-150: Concrete Slab on Ground (150mm)	78.6	N/A	0.00	Timber (12mm)
LIVING	TIMB-002: Suspended Timber Floor - Lined Below	39.1	N/A	3.50	Carpet
Laundry	CSOG-150: Concrete Slab on Ground (150mm)	5.6	N/A	0.00	Tile (8mm)
MASTER	TIMB-002: Suspended Timber Floor - Lined Below	26.7	N/A	3.50	Carpet
Pantry	CSOG-150: Concrete Slab on Ground (150mm)	5.6	N/A	0.00	Timber (12mm)
STORAGE	CSOG-150: Concrete Slab on Ground (150mm)	26.0	N/A	0.00	Timber (12mm)
WIR	TIMB-002: Suspended Timber Floor - Lined Below	13.0	N/A	3.50	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
BED 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
BED 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
BED 4	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
ENS 1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
ENS 4	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
Garage	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.50	No
LIVING	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
MASTER	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes
STORAGE	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.50	No

* Refer to glossary.

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
WIR	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	3.50	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	100	Sealed
BATH	1	Exhaust Fan	250	Sealed
BED 2	2	Downlight	100	Sealed
BED 3	2	Downlight	100	Sealed
BED 4	3	Downlight	100	Sealed
Bath	1	Downlight	100	Sealed
Bath	1	Exhaust Fan	250	Sealed
Bed 5	2	Downlight	100	Sealed
ENS 1	1	Downlight	100	Sealed
ENS 4	1	Downlight	100	Sealed
ENS 4	1	Exhaust Fan	250	Sealed
Kitchen/Living	8	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	250	Sealed
LIVING	6	Downlight	100	Sealed
Laundry	1	Downlight	100	Sealed
MASTER	4	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
STORAGE	4	Downlight	100	Sealed
WIR	2	Downlight	100	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 2	1	1200

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 3	1	1200
BED 4	1	1200
Bed 5	1	1200
Kitchen/Living	2	1200
LIVING	2	1200
MASTER	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	0.50	Medium
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

* 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.