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

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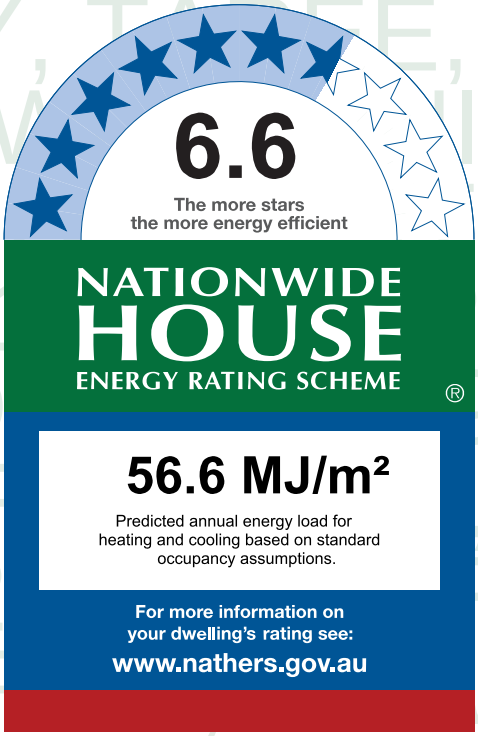

Property

Address	Unit 01, 7 PEPPER TREE WAY, TAREE, NSW, 2430
Lot/DP	LOT No: DP No: 1291002
NCC Class*	1a
Type	New

Plans

Main Plan	30.09.24 REV F
Prepared by	CWC

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	112.1	Suburban
Unconditioned*	14.6	**NatHERS climate zone**
Total	163.3	15 - Williamtown AMO
Garage	36.6	

Thermal Performance

Heating	Cooling
38.3	**18.3**
MJ/m²	MJ/m²

Accredited assessor

Name	Adam Clarke
Business name	10 Star Building Assessments
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Phone	+61 481010999
Accreditation No.	101518
Assessor Accrediting Organisation	ABSA
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-CCFIWI-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? 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
AWS-001-02 A	502/504 Al Sliding Window SG 5Clr	6.38	0.72	0.68	0.76
AWS-005-02 A	514 Al Double Hung Window SG 5Clr	6.16	0.71	0.67	0.75
AWS-011-01 A	541/542 Al Sliding Door SG 5Clr	6.24	0.72	0.68	0.76
AWS-018-01 A	549 ED Al Entry Door SG 5Clr	5.88	0.56	0.53	0.59

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BATH	AWS-001-02 A	W02	1200	1510	Sliding	45	W	None
BED 2	AWS-001-02 A	W04	1500	1810	Sliding	45	W	None
BED 3	AWS-001-02 A	W01	1500	1810	Sliding	45	W	None
ENS	AWS-001-02 A	W05	1200	1510	Sliding	45	W	None
Klt / liv	AWS-011-01 A	D03	2112	2725	Sliding Door	30	N	None
Klt / liv	AWS-005-02 A	W09	1800	610	Double Hung	45	N	None
Klt / liv	AWS-005-02 A	W10	1800	610	Double Hung	45	E	None
Klt / liv	AWS-005-02 A	W11	1800	610	Double Hung	45	E	None
Klt / liv	AWS-005-02 A	W12	1800	610	Double Hung	45	E	None
Klt / liv	AWS-018-01 A	D01	2050	1200	Hinged Door	90	E	None
LDRY	AWS-001-02 A	D02	2112	1510	Sliding	45	S	None
WC	AWS-001-02 A	W03	620	610	Sliding	45	W	None
WIR	AWS-001-02 A	W06	1215	850	Sliding	45	W	None
m bed	AWS-001-02 A	W07	1500	1810	Sliding	45	W	None
m bed	AWS-001-02 A	W08	620	2650	Sliding	45	N	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
None	

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
GARAGE	2100	5000	90	E

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	2.00	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	BV-REFL-CAV	2580	2370	W	455	Yes
BED 2	BV-REFL-CAV	2580	3102	W	455	Yes
BED 3	BV-REFL-CAV	2580	3699	S	450	Yes
BED 3	BV-REFL-CAV	2580	3102	W	455	Yes
ENS	BV-REFL-CAV	2580	2696	W	455	Yes
GARAGE	BV-REFL-CAV	3090	6002	E	451	Yes
GARAGE	BV-REFL-CAV	3090	6001	S	450	Yes
GARAGE	BV-REFL-CAV	3090	1642	N	1817	Yes
Klt / liv	BV-REFL-CAV	2580	762	E		Yes
Klt / liv	BV-REFL-CAV	2580	3728	N	5703	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Klt / liv	BV-REFL-CAV	2580	3487	E	450	Yes
Klt / liv	BV-REFL-CAV	2580	1557	N	293	Yes
Klt / liv	BV-REFL-CAV	2580	2692	E	294	Yes
Klt / liv	BV-REFL-CAV	2580	1977	E	2093	Yes
Klt / liv	BV-REFL-CAV	2580	724	N	514	Yes
LDRY	BV-REFL-CAV	2580	1798	S	450	Yes
PANTRY	BV-REFL-CAV	2580	1498	W	455	Yes
WC	BV-REFL-CAV	2580	999	W	455	Yes
WIR	BV-REFL-CAV	2580	1566	W	455	Yes
m bed	BV-REFL-CAV	2580	4401	E	3480	Yes
m bed	BV-REFL-CAV	2580	3500	W	455	Yes
m bed	BV-REFL-CAV	2580	4025	N	451	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	63.7	0.00
INT-PB	Internal Plasterboard Stud Wall	56.6	1.50

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	8.8	N/A	0.59	Tile (8mm)
BED 2	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	11.5	N/A	0.59	Carpet
BED 3	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	11.5	N/A	0.59	Carpet
ENS	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	4.0	N/A	0.59	Tile (8mm)
GARAGE	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	36.6	N/A	0.59	Exposed
HALL	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	10.7	N/A	0.59	Vinyl

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Klt / liv	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	51.7	N/A	0.59	Vinyl
LDRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.6	N/A	0.59	Tile (8mm)
PANTRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.1	N/A	0.59	Vinyl
WC	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.2	N/A	0.59	Tile (8mm)
WIR	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	4.6	N/A	0.59	Carpet
m bed	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	15.0	N/A	0.59	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
BED 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
BED 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
ENS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
GARAGE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
HALL	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
Klt / liv	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
LDRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
PANTRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
WC	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
WIR	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes
m bed	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	2.50	Yes

Ceiling *penetrations**

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

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
ENS	1	Exhaust Fan	350	Sealed
Klt / liv	1	Exhaust Fan	250	Sealed
LDRY	1	Exhaust Fan	350	Sealed
WC	1	Exhaust Fan	250	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
None		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.30	0.50	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.