Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008833493

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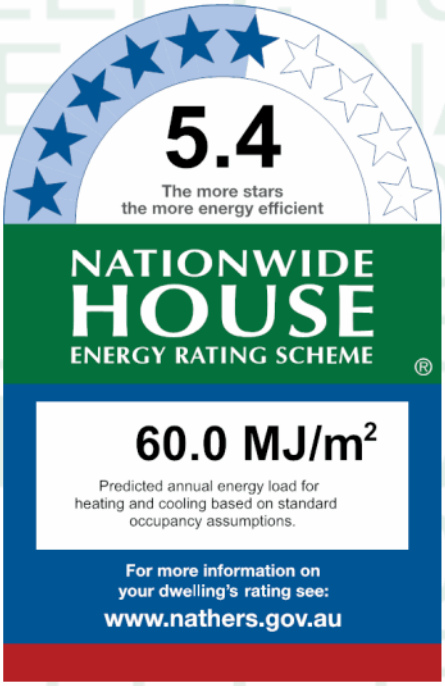

Property

Address	Unit Left, 13 Gowlland Parade , PANANIA , NSW , 2213
Lot/DP	37/232662
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	Tony
Prepared by	Martor Design

Construction and environment

Assessed floor area (m^2)*

Conditioned*	150.0
Unconditioned*	21.0
Total	171.0
Garage	18.0

Exposure type

Suburban

NatHERS climate zone

56

Thermal performance

Heating	Cooling
36.1	**23.8**
MJ/m^2	MJ/m^2

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.

Accredited assessor

Name	Brad Hoad
Business name	Thermal Performance
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Phone	0458-221-211
Accreditation No.	20731
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit www.hstar.com.au/QR/Generate?p=rGGUMzukY.
When using either link, ensure you are visiting www.hstar.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.

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?

Additional notes

I have modeled the shading in accordance with NatHERS principles

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
No Data Available					

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-006-09 A	WID-006-09 A Al Residential Sliding Window DG 3mm Clear / 6mm Air Gap / 4mm Energy Advanta	4.0	0.56	0.53	0.59
WID-006-01 A	WID-006-01 A Al Residential Sliding Window SG 3mm Clear	6.4	0.76	0.72	0.80

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-011-09 A	WID-011-09 A Al Architectural Paragon Stacker Door DG 4mm Clear / 12mm Air Gap / 4mm Clear	4.3	0.54	0.51	0.57
WID-012-04 A	WID-012-04 A Aluminium Awning Window SG 4mmClr	6.4	0.64	0.61	0.67

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Entry/Hall	WID-006-09 A	n/a	2700	950	n/a	00	S	No
Entry/Hall	WID-006-01 A	n/a	1800	850	n/a	45	N	No
Entry/Hall	WID-011-09 A	n/a	2400	4200	n/a	60	W	No
Kit/Liv/Din	WID-006-01 A	n/a	2400	1210	n/a	30	S	No
Kit/Liv/Din	WID-006-01 A	n/a	2400	1210	n/a	30	W	No
Kit/Liv/Din	WID-006-01 A	n/a	2400	1210	n/a	30	W	No
Kit/Liv/Din	WID-011-09 A	n/a	2400	4000	n/a	60	N	No
Bedroom 1	WID-012-04 A	n/a	1800	600	n/a	30	S	Yes
Bedroom 1	WID-012-04 A	n/a	1800	600	n/a	10	S	Yes
Bedroom 2	WID-006-01 A	n/a	600	2400	n/a	10	N	No
Bedroom 3	WID-006-01 A	n/a	600	2400	n/a	10	N	No
Stairs/Hall	WID-006-09 A	n/a	2400	950	n/a	00	S	Yes
Stairs/Hall	WID-006-01 A	n/a	2100	850	n/a	10	N	Yes
Stairs/Hall	WID-006-09 A	n/a	1200	3600	n/a	45	W	Yes

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

* Refer to glossary.

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Window ID	**Window Description**	**Maximum U-value***	**SHGC***	**Substitution tolerance ranges**	
				SHGC lower limit	**SHGC upper limit**
VEL-011-01 W	Glass	2.6	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Bedroom 4	VEL-011-01 W	n/a	0	1275	875	W	No	No

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)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2140	2410	90	S
Entry/Hall	2400	1100	90	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Single Skin Brick	0.30	Light	No insulation	No
EW-2	Brick Veneer	0.30	Light	Bulk Insulation R2	No
EW-3	Weatherboard Cavity Panel Direct Fix	0.30	Light	Anti-glare foil with bulk no gap R2	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-4	Brick Veneer	0.30	Light	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2700	3095	S	0	YES
Entry/Hall	EW-2	2700	2500	S	2000	NO
Entry/Hall	EW-2	2700	6500	W	0	NO
Entry/Hall	EW-2	2700	1400	N	5400	YES
Entry/Hall	EW-2	2700	5395	W	0	YES
Entry/Hall	EW-2	2700	1100	E	0	YES
Kit/Liv/Din	EW-2	2700	1700	S	5400	YES
Kit/Liv/Din	EW-2	2700	4000	W	0	NO
Kit/Liv/Din	EW-2	2700	1200	N	7900	YES
Kit/Liv/Din	EW-2	2700	4300	W	1400	YES
Kit/Liv/Din	EW-2	2700	4700	N	3600	NO
Bedroom 1	EW-3	2400	3100	S	0	YES
Bedroom 2	EW-3	2400	2995	N	600	NO
Bedroom 2	EW-3	2400	1695	S	11900	YES
Bedroom 2	EW-3	2400	4000	W	300	NO
Bedroom 3	EW-3	2400	2895	N	600	NO
Stairs/Hall	EW-4	2400	1095	E	0	YES
Stairs/Hall	EW-4	2400	2500	S	0	NO
Stairs/Hall	EW-4	2400	6500	W	0	NO
Stairs/Hall	EW-3	2400	1400	N	10000	YES
Stairs/Hall	EW-3	2400	5400	W	2000	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation

* Refer to glossary.

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		25.00	Bulk Insulation, No Air Gap R2
IW-2 - Cavity brick, plasterboard		87.00	Bulk Insulation in the centre R1
IW-3 - Cavity wall, direct fix plasterboard, single gap		113.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	18.20	None	Bulk Insulation, Gap to Floor R1	Bare
Entry/Hall	Concrete Slab on Ground 100mm	21.70	None	Bulk Insulation, Gap to Floor R1	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab on Ground 100mm	5.50	None	Bulk Insulation, Gap to Floor R1	Ceramic Tiles 8mm
Powder	Concrete Slab on Ground 100mm	3.10	None	Bulk Insulation, Gap to Floor R1	Ceramic Tiles 8mm
Kit/Liv/Din	Concrete Slab on Ground 100mm	49.10	None	Bulk Insulation, Gap to Floor R1	Cork Tiles or Parquetry 8mm
Bedroom 1/Garage	Timber Above Plasterboard 19mm	12.70		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Bedroom 1/Entry/Hall	Timber Above Plasterboard 19mm	5.30		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kit/Liv/Din	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kit/Liv/Din	Timber Above Plasterboard 19mm	10.40		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 4/Laundry	Timber Above Plasterboard 19mm	2.10		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 4/Powder	Timber Above Plasterboard 19mm	3.30		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 4/Kit/Liv/Din	Timber Above Plasterboard 19mm	4.70		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Garage	Timber Above Plasterboard 19mm	1.40		Bulk Insulation R4	Ceramic Tiles 8mm
Bath/Laundry	Timber Above Plasterboard 19mm	3.50		No Insulation	Ceramic Tiles 8mm
Ensuite/Garage	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R4	Ceramic Tiles 8mm
Stairs/Hall/Garage	Timber Above Plasterboard 19mm	0.60		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Stairs/Hall/Entry/Hall	Timber Above Plasterboard 19mm	15.50		No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs/Hall/Kit/Liv/Din	Timber Above Plasterboard 19mm	2.30		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	Bulk Insulation R4	No
Entry/Hall	Timber Above Plasterboard	No Insulation	No
Laundry	Timber Above Plasterboard	No Insulation	No
Powder	Timber Above Plasterboard	No Insulation	No
Kit/Liv/Din	Plasterboard	Bulk Insulation R4	No
Kit/Liv/Din	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Bedroom 4	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Stairs/Hall	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Laundry	1	Exhaust Fans	300	Sealed
Powder	1	Exhaust Fans	300	Sealed
Kit/Liv/Din	1	Exhaust Fans	300	Sealed
Bath	1	Exhaust Fans	300	Sealed
Ensuite	1	Exhaust Fans	300	Sealed

Ceiling *fans*

* Refer to glossary.

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.30	Light

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).