

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. 0005891510

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### Property

Address	Baz Retreat , Warriewood , NSW , 2102
Lot/DP	16/270907
NCC Class*	1A
Type	New Dwelling

### Plans

Main Plan	29914965
Prepared by	Clarendon Homes

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	155.0	Suburban
Unconditioned*	44.0	NatHERS climate zone
Total	199.0	56
Garage	31.0	



### Accredited assessor

Name	Daniel.Warda
Business name	Energi Thermal Assessors Pty Ltd
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Phone	0452504125
Accreditation No.	101182
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration not completed

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**5.4**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**59.3 MJ/m<sup>2</sup>**  
Predicted annual energy load for  
heating and cooling based on standard  
occupancy assumptions.

For more information on  
your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
34.4	24.9
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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 [hstar.com.au/QR/Generate?p=DaqzmJRuS](http://hstar.com.au/QR/Generate?p=DaqzmJRuS).

When using either link, ensure you are visiting [hstar.com.au](http://hstar.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
No Data Available					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
STG-005-17 A	STG-005-17 A Aluminium Sliding Door SG 5mmPlanibel	4.6	0.64	0.61	0.67
STG-007-01 A	STG-007-01 A Aluminium Sliding Window SG 3Clr	6.3	0.73	0.69	0.77
STG-002-01 A	STG-002-01 A Aluminium Awning Window SG 3Clr	6.5	0.65	0.62	0.68

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	STG-005-17 A	n/a	2400	3200	n/a	90	NE	No
Kitchen/Living	STG-005-17 A	n/a	2400	3200	n/a	90	NE	No
Kitchen/Living	STG-007-01 A	n/a	800	2600	n/a	45	NW	No
Kitchen/Living	STG-002-01 A	n/a	750	800	n/a	00	NW	No
Living	STG-002-01 A	n/a	2000	1800	n/a	45	SW	No
Powder	STG-007-01 A	n/a	2000	800	n/a	30	NW	No
Bedroom 1	STG-002-01 A	n/a	1200	2400	n/a	60	SW	No
Ensuite	STG-002-01 A	n/a	1000	600	n/a	90	NW	No
Leisure	STG-007-01 A	n/a	1000	2600	n/a	45	NE	No
Leisure	STG-002-01 A	n/a	1250	800	n/a	00	NW	No
Bedroom 2	STG-007-01 A	n/a	1000	2600	n/a	45	NE	No
Bath	STG-007-01 A	n/a	1200	800	n/a	45	SE	No
Bedroom 4	STG-007-01 A	n/a	1200	1500	n/a	45	SE	No
Bedroom 3	STG-002-01 A	n/a	1300	1800	n/a	45	SW	No

## 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

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

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
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No Data Available

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2411	4810	90	SW
Entry	2340	1020	90	SW
Laundry	2340	820	90	NW

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R1.5	No
EW-2	Brick Veneer	0.50	Medium	No insulation	No
EW-3	Single Skin Brick	0.50	Medium	No insulation	No
EW-4	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R1.5	No
EW-5	Brick Veneer	0.50	Medium	Bulk Insulation R1.5	No

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2750	8000	NE	100	NO
Kitchen/Living	EW-1	2750	3795	SE	100	YES
Kitchen/Living	EW-1	2750	5895	NW	100	NO
WIP	EW-1	2750	1300	NE	100	YES
WIP	EW-1	2750	2495	SE	100	NO
Garage 1	EW-2	3607	5595	SE	100	NO
Garage 1	EW-3	3607	5595	SW	100	NO
Entry	EW-1	3093	1490	SW	1200	YES
Living	EW-1	3093	1100	SE	1800	YES
Living	EW-1	3093	2800	SW	100	NO
Living	EW-1	3093	3800	NW	100	NO
Living	EW-1	3093	600	NE	100	YES
Powder	EW-1	3093	1490	NW	100	YES
Laundry	EW-1	3093	1790	NW	100	NO
Bedroom 1	EW-4	2450	3695	NW	600	NO
Bedroom 1	EW-4	2450	1100	SE	4800	YES

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-4	2450	3800	SW	600	NO
WIR	EW-4	2450	995	NW	600	NO
WIR	EW-5	2450	495	NW	600	NO
Ensuite	EW-5	2450	1890	NW	600	NO
Leisure	EW-5	2450	3795	NE	600	NO
Leisure	EW-5	2450	5905	NW	600	NO
Bedroom 2	EW-5	2450	4195	NE	600	NO
Bedroom 2	EW-5	2450	3295	SE	600	NO
Bath	EW-4	2450	2390	SE	600	NO
Bedroom 4	EW-4	2450	3090	SE	600	NO
Bedroom 3	EW-4	2450	3095	SE	600	NO
Bedroom 3	EW-4	2450	4195	SW	600	YES

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
W-1 - Cavity wall, direct fix plasterboard, single gap		154.00	No insulation
W-2 - Cavity wall, direct fix plasterboard, single gap		33.00	Bulk Insulation, No Air Gap R1.5

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Waffle pod slab 225 mm 100mm	47.70	None	Waffle Pod 225mm	Ceramic Tiles 8mm
WIP	Waffle pod slab 225 mm 100mm	3.80	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Garage 1	Waffle pod slab 225 mm 100mm	30.90	None	Waffle Pod 225mm	Bare
Entry	Waffle pod slab 225 mm 100mm	8.90	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Living	Waffle pod slab 225 mm 100mm	10.40	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Powder	Waffle pod slab 225 mm 100mm	2.20	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Laundry	Waffle pod slab 225 mm 100mm	4.00	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Bedroom 1/Entry	Timber Above Plasterboard 19mm	3.80		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 1/Living	Timber Above Plasterboard 19mm	8.00		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 1	Suspended Timber Floor 19mm	1.70	Totally Open	No Insulation	Carpet+Rubber Underlay 18mm
WIR/Entry	Timber Above Plasterboard 19mm	1.30		No Insulation	Carpet+Rubber Underlay 18mm
WIR/Powder	Timber Above Plasterboard 19mm	2.10		No Insulation	Carpet+Rubber Underlay 18mm
Ensuite/Laundry	Timber Above Plasterboard 19mm	4.00		No Insulation	Ceramic Tiles 8mm
Upper Hall/Garage 1	Timber Above Plasterboard 19mm	2.00		No Insulation	Carpet+Rubber Underlay 18mm
Upper Hall/Entry	Timber Above Plasterboard 19mm	3.40		No Insulation	Carpet+Rubber Underlay 18mm
Leisure/Kitchen/Living	Timber Above Plasterboard 19mm	23.30		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	13.50		No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	6.00		No Insulation	Ceramic Tiles 8mm
Bath/WIP	Timber Above Plasterboard 19mm	0.50		No Insulation	Ceramic Tiles 8mm
WC/Kitchen/Living	Timber Above Plasterboard 19mm	2.00		No Insulation	Ceramic Tiles 8mm
Bedroom 4/Kitchen/Living	Timber Above Plasterboard 19mm	1.70		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 4/Garage 1	Timber Above Plasterboard 19mm	8.20		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Garage 1	Timber Above Plasterboard 19mm	12.70		No Insulation	Carpet+Rubber Underlay 18mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIP	Plasterboard	Bulk Insulation R3.5	No
WIP	Timber Above Plasterboard	No Insulation	No
Garage 1	Plasterboard	Bulk Insulation R3.5	No
Garage 1	Timber Above Plasterboard	No Insulation	No
Entry	Timber Above Plasterboard	No Insulation	No
Living	Plasterboard	Bulk Insulation R3.5	No
Living	Timber Above Plasterboard	No Insulation	No
Powder	Timber Above Plasterboard	No Insulation	No
Laundry	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Upper Hall	Plasterboard	Bulk Insulation R3.5	No
Leisure	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
WC	Plasterboard	Bulk Insulation R3.5	No
Bedroom 4	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm <sup>2</sup> )	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	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.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	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.
<b>Exposure category – exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category – open</b>	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).
<b>Exposure category – suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category – protected</b>	terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	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 <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	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 <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	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.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	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.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	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).