Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005330162

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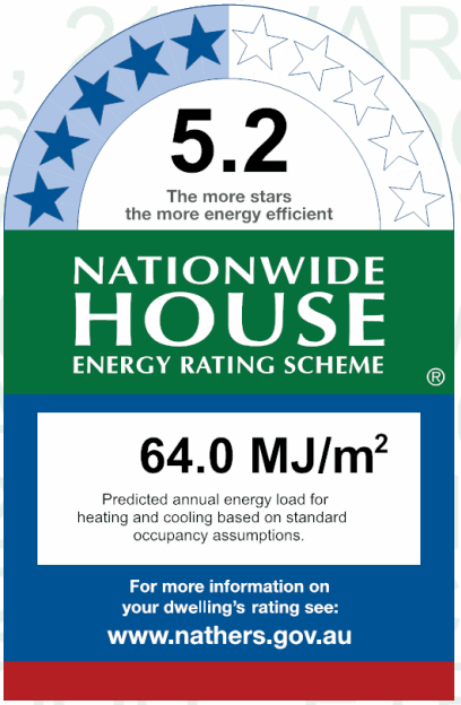

Property

Address	Baz Retreat , Warriewood , NSW , 2102
Lot/DP	18/270907
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	29914556
Prepared by	Clarendon Homes - AK

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	157.0	Suburban
Unconditioned*	49.0	**NatHERS climate zone**
Total	206.0	56
Garage	34.0	

Thermal performance

Heating	Cooling
40.0	**24.0**
MJ/m^2	MJ/m^2

Accredited assessor

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

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=VIyNGXBIG.
When using either link, ensure you are visiting 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?

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-002-01 A	STG-002-01 A Aluminium Awning Window SG 3Clr	6.5	0.65	0.62	0.68
STG-058-03 A	STG-058-03 A Aluminium Bi-fold Window SG 3Clr	6.1	0.52	0.49	0.55
STG-007-01 A	STG-007-01 A Aluminium Sliding Window SG 3Clr	6.3	0.73	0.69	0.77

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Family/	STG-002-01 A	n/a	1800	2600	n/a	60	NE	No
Kitchen/Family/	STG-002-01 A	n/a	600	2700	n/a	00	SE	No
Kitchen/Family/	STG-002-01 A	n/a	1800	800	n/a	90	NW	No
Kitchen/Family/	STG-002-01 A	n/a	1800	800	n/a	90	NW	No
Kitchen/Family/	STG-002-01 A	n/a	1800	2600	n/a	60	NW	No
Kitchen/Family/	STG-002-01 A	n/a	1000	2100	n/a	00	NE	No
Kitchen/Family/	STG-058-03 A	n/a	2100	3010	n/a	90	NW	No
Butlers	STG-002-01 A	n/a	600	1200	n/a	00	SE	No
Entry	STG-002-01 A	n/a	1800	600	n/a	00	SW	No
Bedroom 1	STG-007-01 A	n/a	1200	1800	n/a	45	SE	No
Bedroom 2	STG-002-01 A	n/a	1300	2600	n/a	60	SW	No
Bedroom 3	STG-007-01 A	n/a	1200	1800	n/a	45	SE	No
Ensuite 2	STG-002-01 A	n/a	1000	800	n/a	90	SE	No
Leisure	STG-002-01 A	n/a	1200	1500	n/a	00	SW	No
Leisure	STG-007-01 A	n/a	600	2600	n/a	45	NW	No
Bath	STG-007-01 A	n/a	1200	1500	n/a	45	SE	No
Ensuite	STG-007-01 A	n/a	1000	800	n/a	45	NE	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	

* Refer to glossary.

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
Laundry	2040	820	90	NE
Entry	2340	1020	90	SW
Garage	2412	4810	90	SW

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 R2	No
EW-2	Single Skin Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	No insulation	No
EW-4	Brick Veneer	0.50	Medium	Bulk Insulation R2	No
EW-5	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2	Yes
EW-6	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Family/	EW-1	2600	3600	NE	600	NO
Kitchen/Family/	EW-1	2600	7595	SE	100	NO
Kitchen/Family/	EW-1	2600	8595	NW	100	NO
Kitchen/Family/	EW-1	2600	3000	NE	4100	YES
Kitchen/Family/	EW-1	2600	3500	NW	3100	YES
Butlers	EW-1	2600	1690	SE	100	YES
Laundry	EW-1	2600	1500	NE	100	YES
Laundry	EW-1	2600	1895	SE	100	NO
Entry	EW-1	2943	2395	SW	1300	YES
Entry	EW-1	2943	4695	NW	100	NO
Garage	EW-2	3286	5700	SW	1200	NO
Garage	EW-3	3286	900	NW	2500	YES
Garage	EW-3	3286	6495	SE	100	NO
Bedroom 1	EW-4	950	4295	SE	0	NO
Bedroom 1	EW-5	1500	4295	SE	600	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-6	2450	4195	NE	600	NO
Bedroom 2	EW-6	2450	3195	SE	600	NO
Bedroom 2	EW-6	2450	4200	SW	600	NO
Bedroom 2	EW-4	950	2000	NW	0	YES
Bedroom 2	EW-5	1500	2000	NW	600	YES
Bedroom 3	EW-4	950	3890	SE	0	NO
Bedroom 3	EW-5	1500	3890	SE	600	NO
WIR	EW-4	950	3190	NW	0	NO
WIR	EW-5	1500	3190	NW	600	NO
WIR 3	EW-6	2450	1390	SE	600	NO
Ensuite 2	EW-6	2450	1590	SE	600	NO
Leisure	EW-4	950	2395	SW	0	YES
Leisure	EW-5	1500	2395	SW	600	YES
Leisure	EW-4	950	8795	NW	0	NO
Leisure	EW-5	1500	8795	NW	600	NO
Bath	EW-6	2450	2490	SE	600	NO
Ensuite	EW-4	950	2895	NW	0	NO
Ensuite	EW-5	1500	2895	NW	600	NO
Ensuite	EW-6	2450	2395	NE	600	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		156.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		31.00	Bulk Insulation, No Air Gap R2

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Family/	Waffle pod slab 300 mm 100mm	45.90	None	Waffle Pod 300mm	60/40 Carpet 10mm/Ceramic
Living	Waffle pod slab 300 mm 100mm	9.30	None	Waffle Pod 300mm	Carpet+Rubber Underlay 18mm
Butlers	Waffle pod slab 300 mm 100mm	3.80	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Laundry	Waffle pod slab 300 mm 100mm	6.80	None	Waffle Pod 300mm	Ceramic Tiles 8mm
PDR	Waffle pod slab 300 mm 100mm	2.70	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Entry	Waffle pod slab 300 mm 100mm	11.00	None	Waffle Pod 300mm	Carpet+Rubber Underlay 18mm
Garage	Waffle pod slab 225 mm 100mm	34.30	None	Waffle Pod 225mm	Bare
Bedroom 1/Kitchen/Family/	Timber Above Plasterboard 19mm	17.50		No Insulation	Carpet+Rubber Underlay 18mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended Timber Floor 19mm	0.90	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Bedroom 2/Garage	Timber Above Plasterboard 19mm	9.10		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Bedroom 2	Suspended Timber Floor 19mm	4.50	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Family/	Timber Above Plasterboard 19mm	4.30		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Living	Timber Above Plasterboard 19mm	1.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Butlers	Timber Above Plasterboard 19mm	3.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Laundry	Timber Above Plasterboard 19mm	1.90		No Insulation	Carpet+Rubber Underlay 18mm
WIR/Kitchen/Family/	Timber Above Plasterboard 19mm	6.90		No Insulation	Carpet+Rubber Underlay 18mm
WIR 3/Laundry	Timber Above Plasterboard 19mm	2.00		No Insulation	Carpet+Rubber Underlay 18mm
WIR 3/Garage	Timber Above Plasterboard 19mm	0.50		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Ensuite 2/Garage	Timber Above Plasterboard 19mm	4.80		Bulk Insulation R2	Ceramic Tiles 8mm
Leisure/Kitchen/Family/	Timber Above Plasterboard 19mm	6.80		No Insulation	Carpet+Rubber Underlay 18mm
Leisure/Living	Timber Above Plasterboard 19mm	7.20		No Insulation	Carpet+Rubber Underlay 18mm
Leisure/PDR	Timber Above Plasterboard 19mm	1.80		No Insulation	Carpet+Rubber Underlay 18mm
Leisure/Entry	Timber Above Plasterboard 19mm	11.00		No Insulation	Carpet+Rubber Underlay 18mm
Leisure/Garage	Timber Above Plasterboard 19mm	2.90		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Bath/PDR	Timber Above Plasterboard 19mm	0.90		No Insulation	Ceramic Tiles 8mm
Bath/Garage	Timber Above Plasterboard 19mm	6.70		Bulk Insulation R2	Ceramic Tiles 8mm
Ensuite/Kitchen/Family/	Timber Above Plasterboard 19mm	3.00		No Insulation	Ceramic Tiles 8mm
Ensuite	Suspended Timber Floor 19mm	3.70	Totally Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Family/	Plasterboard	Bulk Insulation R4	No
Kitchen/Family/	Timber Above Plasterboard	No Insulation	No
Living	Timber Above Plasterboard	No Insulation	No
Butlers	Timber Above Plasterboard	No Insulation	No
Laundry	Plasterboard	Bulk Insulation R4	No
Laundry	Timber Above Plasterboard	No Insulation	No
PDR	Timber Above Plasterboard	No Insulation	No
Entry	Timber Above Plasterboard	No Insulation	No
Garage	Plasterboard	No insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	Bulk Insulation R2	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
WIR 3	Plasterboard	Bulk Insulation R4	No
Ensuite 2	Plasterboard	Bulk Insulation R4	No
Leisure	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
PDR	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

* 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).