Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005531603

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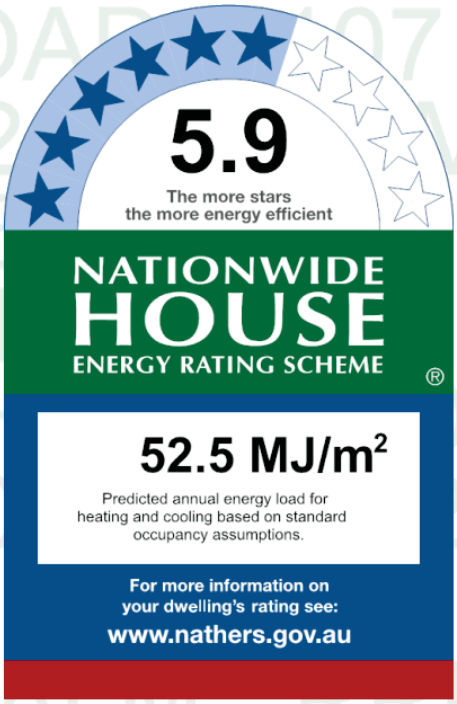

Property

Address	Unit 101, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	186.7	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	186.7	56
Garage		

Thermal performance

Heating	Cooling
42.0	**10.5**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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

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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
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-001-04 A	01	1700	650	Awning	30	W	None
Living / Dining / Kitchen	ALM-002-04 A	02	2400	600	Louvre	90	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	03	2400	2900	Sliding	45	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	04	2400	600	Louvre	90	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	05	2400	2900	Sliding	45	W	Miniature Louvres
Bedroom 1	ALM-002-04 A	06	2400	2900	Sliding	45	E	Miniature Louvres
Bedroom 1	ALM-002-04 A	07	2400	600	Louvre	90	E	Miniature Louvres
Bedroom 2	ALM-001-04 A	08	1400	2000	Awning	10	E	None
Bedroom 3	ALM-001-04 A	09	1350	2550	Awning	10	W	None
Media Room	ALM-001-04 A	10	1350	2550	Awning	10	E	None
Hall / Bathroom	ALM-001-04 A	11	1350	2550	Awning	10	S	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	3100	N	7900	Yes
Living / Dining / Kitchen	EW-004	2700	2600	S		No
Living / Dining / Kitchen	EW-004	2700	1300	W	6100	Yes
Living / Dining / Kitchen	EW-004	2700	6400	S	700	Yes
Living / Dining / Kitchen	EW-004	2700	3500	W	2400	Yes
Living / Dining / Kitchen	EW-004	2700	900	N	4000	Yes
Living / Dining / Kitchen	EW-004	2700	3700	W	3500	Yes
Bedroom 1	EW-004	2700	4500	E	700	Yes
Bedroom 2	EW-004	2700	1100	E	700	Yes
Bedroom 2	EW-004	2700	3100	E	700	Yes
Bedroom 2	EW-004	2700	6700	S		No
Bedroom 3	EW-004	2700	4000	S		No
Bedroom 3	EW-004	2700	2550	W		No
Media Room	EW-004	2700	2550	E		No
Media Room	EW-004	2700	3500	S		No
Hall / Bathroom	EW-004	2700	3200	S		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	94.50	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	100.44	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Outdoor Air	R2.0 - timber - concrete 200mm	62.20		R2.0	

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Outdoor Air	R2.0 - timber - concrete 200mm	5.80		R2.0	
Bedroom 1/Neighbour	carpet - concrete 200mm	21.10			Carpet 10 + rubber underlay 8
Bedroom 1/Outdoor Air	R2.0 - carpet - concrete 200mm	2.80		R2.0	Carpet 10 + rubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	7.70			Ceramic tile
Bedroom 2/Outdoor Air	R2.0 - carpet - concrete 200mm	7.70		R2.0	Carpet 10 + rubber underlay 8
Bedroom 2/Neighbour	carpet - concrete 200mm	7.90			Carpet 10 + rubber underlay 8
Bedroom 2/Neighbour	tiles - concrete 200mm	5.20			Ceramic tile
Bedroom 3/Neighbour	carpet - concrete 200mm	12.00			Carpet 10 + rubber underlay 8
Bedroom 3/Neighbour	tiles - concrete 200mm	5.20			Ceramic tile
Media Room/Outdoor Air	R2.0 - UC - timber - concrete 200mm	16.10		R2.5	
Hall / Bathroom/Neighbour	timber - concrete 200mm	22.30			
Hall / Bathroom/Outdoor Air	R2.0 - UC - timber - concrete 200mm	2.80		R2.5	
Hall / Bathroom/Outdoor Air	R2.0 - UC - tiles - concrete 200mm	7.90		R2.5	Ceramic tile
Roof Space/Living / Dining / Kitchen	R3.0 - concrete 200mm (RS over)	25.20		R3.0	
Roof Space/Bedroom 2	R3.0 - concrete 200mm (RS over)	16.60		R3.0	
Roof Space/Bedroom 3	R3.0 - concrete 200mm (RS over)	1.10		R3.0	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Roof Space/Living / Dining / Kitchen	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Neighbour/Bedroom 2	timber - concrete 200mm		No
Roof Space/Bedroom 2	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Bedroom 3	timber - concrete 200mm		No
Roof Space/Bedroom 3	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Media Room	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	26	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	12	Downlight		Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	9	Downlight		Sealed
Bedroom 2	1	Ceiling exhaust fan	160	Sealed
Bedroom 3	6	Downlight		Sealed
Bedroom 3	1	Ceiling exhaust fan	160	Sealed
Media Room	5	Downlight		Sealed
Hall / Bathroom	12	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light
slate tile roof with no ceiling under		85	Dark

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).

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Nationwide House Energy Rating Scheme
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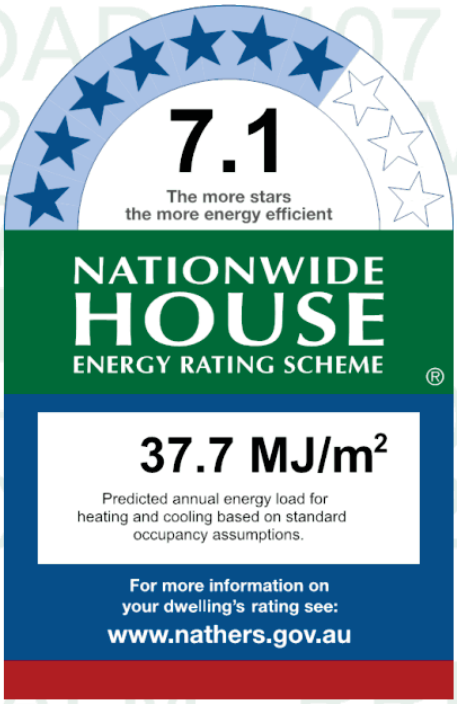

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Heating	Cooling
26.1	**11.6**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

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Provisional* values

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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
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ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2400	2300	Sliding	45	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	02	2400	600	Louvre	90	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	03	2400	2300	Sliding	45	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	04	2400	600	Louvre	90	W	Miniature Louvres
Bedroom 1	ALM-002-04 A	05	2400	2400	Sliding	45	E	Miniature Louvres
Bedroom 1	ALM-002-04 A	06	2400	600	Louvre	90	E	Miniature Louvres
Bedroom 2	ALM-002-04 A	07	2400	2400	Sliding	45	E	Miniature Louvres
Bedroom 2	ALM-002-04 A	08	2400	600	Louvre	90	E	Miniature Louvres
Bedroom 3	ALM-001-04 A	09	1350	2400	Awning	10	W	None
Media Room	ALM-001-04 A	10	1350	2400	Awning	10	E	None
Hall / Bathroom	ALM-001-04 A	11	1350	2400	Awning	10	N	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	3700	W	4000	Yes
Living / Dining / Kitchen	EW-004	2700	900	S	4000	Yes
Living / Dining / Kitchen	EW-004	2700	3500	W	2900	Yes
Living / Dining / Kitchen	EW-004	2700	3000	N	7000	Yes
Bedroom 1	EW-004	2700	3600	E	2300	Yes
Bedroom 1	EW-004	2700	1000	S	4000	Yes
Bedroom 2	EW-004	2700	3700	E	2300	Yes
Bedroom 3	EW-004	2700	2950	W		No
Media Room	EW-004	2700	2950	E		No
Hall / Bathroom	EW-004	2700	3000	N		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	94.23	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	110.97	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Neighbour	timber - concrete 200mm	56.40			
Bedroom 1/Neighbour	carpet - concrete 200mm	23.00			Carpet 10 Orubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	7.30			Ceramic tile
Bedroom 2/Neighbour	carpet - concrete 200mm	18.40			Carpet 10 Orubber underlay 8
Bedroom 2/Neighbour	tiles - concrete 200mm	4.90			Ceramic tile
Bedroom 3/Neighbour	carpet - concrete 200mm	14.80			Carpet 10 Orubber underlay 8
Media Room/Neighbour	timber - concrete 200mm	14.30			

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hall / Bathroom/Neighbour	timber - concrete 200mm	20.80			
Hall / Bathroom/Neighbour	tiles - concrete 200mm	7.50			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Neighbour/Bedroom 2	timber - concrete 200mm		No
Neighbour/Bedroom 3	timber - concrete 200mm		No
Neighbour/Media Room	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	22	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	12	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	8	Downlight		Sealed
Bedroom 2	1	Ceiling exhaust fan	160	Sealed
Bedroom 3	4	Downlight		Sealed
Bedroom 3	1	Ceiling exhaust fan	160	Sealed
Media Room	5	Downlight		Sealed
Hall / Bathroom	12	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light

* 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 uni+ue climate qone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. zhe actual energy consumption of a home may vary significantly fromthe 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 re+uirements 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. zhe higher the star rating the more thermally efficient the dwelling is.

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Australian Capital zerritory (ACz) 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 ACz licensing register

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zhe 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.

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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 fromthe assessor.

Glossary

Annual energy load	the predicted amount of energy re+uired 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 re+uire 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 qone within a dwelling that is expected to re+uire 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.
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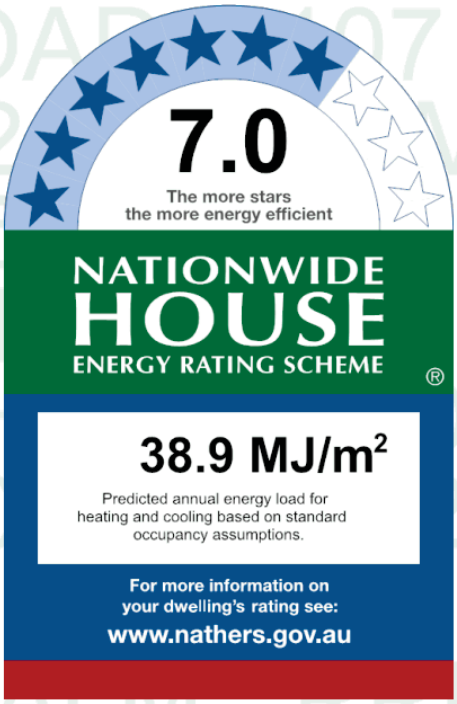
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10me.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 me.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horiqontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies fromupper 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 zechnical 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 subse+uently released inward. SHGC is expressed as a number between 0 and 1. zhe 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. zhe lower the U-value, the better the insulating ability.
Unconditioned	a qone within a dwelling that is assumed to not re+uire 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005531645

Generated on 18 Dec 2020 using AccuRate Sustainability V2.4.3.21



Property

Address	Unit 103, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	123.5	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	123.5	56
Garage		

Thermal performance

Heating	Cooling
29.1	**9.7**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=AvhAwQoKG.
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 (Bustralian * uilding Codes * oard 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
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2400	2900	Sliding	45	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	02	2400	600	Louvre	90	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	03	2400	2900	Sliding	45	W	Miniature Louvres
Living / Dining / Kitchen	ALM-002-04 A	04	2400	600	Louvre	90	W	Miniature Louvres
Bedroom 1	ALM-002-04 A	05	2400	2400	Sliding	45	E	Miniature Louvres
Bedroom 1	ALM-002-04 A	06	2400	600	Louvre	90	E	Miniature Louvres
Bedroom 2	ALM-001-04 A	07	1400	1900	Awning	10	E	None
Bedroom 3	ALM-001-04 A	08	1350	2400	Awning	10	W	None
Hall / Bathroom	ALM-001-04 A	09	1350	2400	Awning	10	S	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	3700	W	3500	Yes
Living / Dining / Kitchen	EW-004	2700	900	S	4000	Yes
Living / Dining / Kitchen	EW-004	2700	3500	W	2300	Yes
Living / Dining / Kitchen	EW-004	2700	2400	E		No
Bedroom 1	EW-004	2700	3800	E	2300	Yes
Bedroom 2	EW-004	2700	3600	E	650	Yes
Bedroom 3	EW-004	2700	2400	W		No
Hall / Bathroom	EW-004	2700	3000	S		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	71.82	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	116.64	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Neighbour	timber - concrete 200mm	49.20			
Bedroom 1/Neighbour	carpet - concrete 200mm	12.80			Carpet 10 Orubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	8.00			Ceramic tile
Bedroom 2/Neighbour	carpet - concrete 200mm	5.40			Carpet 10 Orubber underlay 8
Bedroom 2/+ utdoor Air	R2.0 - UC - carpet - concrete 200mm	5.90		R2.0	Carpet 10 Orubber underlay 8
Bedroom 3/Neighbour	carpet - concrete 200mm	12.80			Carpet 10 Orubber underlay 8
Hall / Bathroom/Neighbour	timber - concrete 200mm	22.40			
Hall / Bathroom/Neighbour	tiles - concrete 200mm	7.00			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Roof Space/Bedroom 1	R3.0 - concrete 200mm (RS over)	4.20		R3.0	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Roof Space/Bedroom 1	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Bedroom 2	timber - concrete 200mm		No
Neighbour/Bedroom 3	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	18	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	9	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	4	Downlight		Sealed
Bedroom 3	4	Downlight		Sealed
Hall / Bathroom	10	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light
slate tile roof with no ceiling under		85	Dark

* Refer to glossary.

Explanatory notes

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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.
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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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005531702

Generated on 18 Dec 2020 using AccuRate Sustainability V2.4.3.21

Property

Address	Unit 104, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	125.4	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	125.4	56
Garage		

Thermal performance

Heating	**Cooling**
14.2	**12.9**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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

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National Construction Code (NCC) requirements

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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
ALM-001-04 A	Aluminium 5 SG Low Solar Gain Low-E	6.3	0.48	0.2B	0.42

Custom* windows

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

Window and glazed door *schedule*

0ocation	Window ID	Window no5	Height 3mm1	Width 3mm1	Window t6pe	Npening E	Nrientation	Window shading device*
Living 9Dining 9Vitchen	ALM-001-04 A	08	1400	1700	Sliding	33	N	None

* Refer to glossary.

0ocation	Window ID	Window no5	Height 3mm1	Width 3mm1	Window t6pe	Npening E	Nrientation	Window shading device*
Living 9Dining 9Vitchen	ALM-001-04 A	01	1400	300	Louvre	B0	N	None
Living 9Dining 9Vitchen	ALM-001-04 A	02	1400	2400	Sliding	30	W	None
Living 9Dining 9Vitchen	ALM-001-04 A	04	1400	300	Louvre	B0	W	None
5edroom 8	ALM-001-04 A	06	1400	1600	Sliding	46	W	None
5edroom 8	ALM-001-04 A	03	1400	300	Louvre	B0	W	None
5edroom 1	ALM-001-04 A	0/	1400	8700	Sliding	46	N	None
5edroom 1	ALM-001-04 A	07	1400	300	Louvre	B0	N	None
5edroom 2	ALM-001-04 A	0B	1400	8700	Sliding	46	W	None
5edroom 2	ALM-001-04 A	80	1400	300	Louvre	B0	W	None

%oof 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					

%oof window *schedule*

0ocation	Window ID	Window no5	Npening E	Height 3mm1	Width 3mm1	Nrientation	Nutdoor shade	Indoor shade
No Data Available								

Sk6light *type and performance*

Sk6light ID	Sk6light description
No Data Available	

Sk6light *schedule*

0ocation	Sk6light ID	Sk6light y o5	Sk6light shaft length 3mm1	Area 3m\1	Nrientation	Nutdoor shade	Diffuser	Sk6light shaft reflectance
No Data Available								

* Refer to glossary.

Oxternal door *schedule*

0ocation	Height 3mm1	Width 3mm1	Npening E	Nrientation
No Data Available				

Oxternal wall *type*

Wall ID	Wall t6pe	Solar absorptance	Wall shade 3colour1	Bulk insulation 3%-value1	%eflective wall wrap*
EW-004	Fibre-cement sheet9Concrete wall9Plasterboard	60	Medium	Glass fibre batt: R1.0	No

Oxternal wall *schedule*

0ocation	Wall ID	Height 3mm1	Width 3mm1	Nrientation	Horizontal shading feature* maximum projection 3mm1	Vertical shading feature 36es/no1
Living 9Dining 9Vitchen	EW-004	1/ 00	3600	N	8260	Yes
Living 9Dining 9Vitchen	EW-004	1/ 00	4400	W	8400	Yes
5edroom 8	EW-004	1/ 00	2/ 00	W	8200	Yes
5edroom 8	EW-004	1/ 00	1200	N	6000	Yes
5edroom 1	EW-004	1/ 00	2800	N	8260	Yes
5edroom 2	EW-004	1/ 00	2/ 00	W	8700	Yes
5edroom 2	EW-004	1/ 00	1800	N	3000	Yes

Internal wall *type*

Wall ID	Wall t6pe	Area 3m)1	Bulk insulation
IW-008	Plasterboard	73.82	
IW-004	Fibre-cement sheet9Concrete wall9Plasterboard	/ 2.44	

Floor *type*

0ocation	Construction	Area 3m)1	Sub-floor ventilation	Added insulation 3%-value1	Covering
Living 9Dining 9Vitchen9Neighbour	timber - concrete 100mm	61.60			
5edroom 89Neighbour	carpet - concrete 100mm	18.10			Carpet 80 Orubber underlay 7
5edroom 89Neighbour	tiles - concrete 100mm	3.20			Ceramic tile
5edroom 19Neighbour	carpet - concrete 100mm	82.20			Carpet 80 Orubber underlay 7
5edroom 29Neighbour	carpet - concrete 100mm	86.B0			Carpet 80 Orubber underlay 7
Hall 95athroom9Neighbour	timber - concrete 100mm	80.30			
Hall 95athroom9Neighbour	tiles - concrete 100mm	6.30			Ceramic tile

* Refer to glossary.

Ceiling *type*

0ocation	Construction material/t6pe	Bulk insulation %-value 3ma6 include edge batt values1	%effective wrap*
Neighbour9Living 9Dining 9Vitchen	timber - concrete 100mm		No
Neighbour95edroom 8	timber - concrete 100mm		No
Neighbour95edroom 1	timber - concrete 100mm		No
Neighbour95edroom 2	timber - concrete 100mm		No
Neighbour9Hall 95athroom	timber - concrete 100mm		No

Ceiling *penetrations**

0ocation	Quantit6	T6pe	Diameter 3mm)1	Sealed/unsealed
Living 9Dining 9Vitchen	18	Downlight		Sealed
Living 9Dining 9Vitchen	8	Ceiling exhaust fan	830	Sealed
5edroom 8	80	Downlight		Sealed
5edroom 8	8	Ceiling exhaust fan	830	Sealed
5edroom 1	4	Downlight		Sealed
5edroom 2	3	Downlight		Sealed
Hall 95athroom	6	Downlight		Sealed
Hall 95athroom	8	Ceiling exhaust fan	830	Sealed

Ceiling *fans*

0ocation	Quantit6	Diameter 3mm1
No Data Available		

%oof *type*

Construction	Added insulation 3%-value1	Solar absorptance	%oof shade
R2.0 - Concrete slab 100mm	R2.0	20	Light

* Refer to glossary.

Oxplanator6 notes

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Ratings are based on a uni+ue climate qone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. zhe 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 re+uirements 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. zhe higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

zo ensure the NatHERS Certificate is of a high +uality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Trganisation (AAT).

Australian Capital zerritory (ACz) 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 ACz licensing register

AATs have specific +uality assurance processes in place, and continuing professional development re+uirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of +uality assurance or any ongoing training re+uirements.

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Glossar6

Annual energ6 load	the predicted amount of energy re+uired 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 re+uire 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 qone within a dwelling that is expected to re+uire heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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Oxposure categor6 – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 80m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 2 floors).
Oxposure categor6 – suburban	terrain with numerous, closely spaced obstructions below 80m e.g. suburban housing, heavily vegetated bushland areas.
Oxposure categor6 – protected	terrain with numerous, closely spaced obstructions over 80 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horiqontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
yational Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 8, 1 or 4 buildings and attached Class 80a buildings. Definitions can be found at www.abcb.gov.au.
Npening 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 zechnical Note and can be found at www.nathers.gov.au
%effective 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.
%oof 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 3SHGC1	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subse+uently released inward. SHGC is expressed as a number between 0 and 8. zhe lower a window's SHGC, the less solar heat it transmits.
Sk6light (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. zhe lower the U-value, the better the insulating ability.
Unconditioned	a qone within a dwelling that is assumed to not re+uire 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 wall9window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005531991

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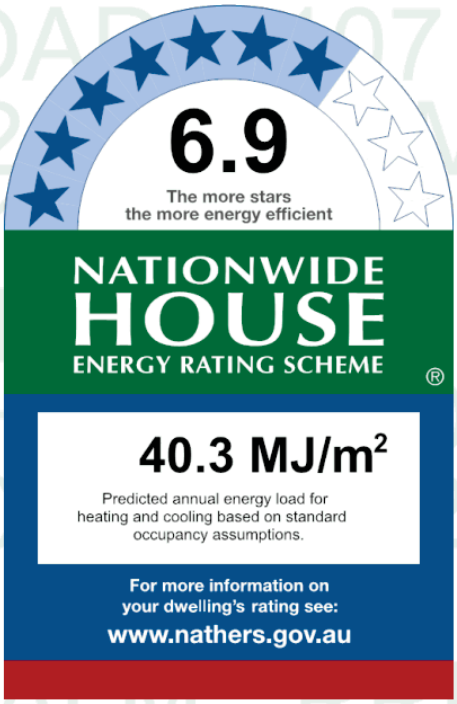

Property

Address	Unit 105, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	124.3	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	124.3	56
Garage		

Thermal performance

Heating	Cooling
28.7	**11.6**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=OOXBbFnQE.
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?

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
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no9	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2400	2700	Sliding	66	N	None
Living / Dining / Kitchen	ALM-002-04 A	02	2400	600	Louvre	90	N	None
Living / Dining / Kitchen	ALM-002-04 A	03	2400	600	Louvre	90	N	None
Living / Dining / Kitchen	ALM-002-04 A	04	2400	1700	Sliding	45	N	None
Living / Dining / Kitchen	ALM-001-04 A	05	2400	900	Awning	10	E	None
Living / Dining / Kitchen	ALM-002-04 A	06	2400	600	Louvre	90	E	None
Living / Dining / Kitchen	ALM-002-04 A	07	2400	3100	Sliding	66	E	None
Bedroom 1	ALM-002-04 A	08	2400	1800	Sliding	45	N	None
Bedroom 1	ALM-002-04 A	09	2400	600	Louvre	90	N	None
Bedroom 2	ALM-002-04 A	10	2400	2200	Sliding	45	E	Miniature Louvres
Bedroom 2	ALM-002-04 A	11	2400	600	Louvre	90	E	Miniature Louvres
Bedroom 3	ALM-002-04 A	12	2400	2200	Sliding	45	E	Miniature Louvres
Bedroom 3	ALM-002-04 A	13	2400	600	Louvre	90	E	Miniature Louvres

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 no9	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 No9	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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	2ulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	jertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	6300	N	1350	Yes
Living / Dining / Kitchen	EW-004	2700	6600	E	1800	Yes
Bedroom 1	EW-004	2700	3000	N	1350	Yes
Bedroom 2	EW-004	2700	3000	E	1800	Yes
Bedroom 2	EW-004	2700	3100	S	650	Yes
Bedroom 3	EW-004	2700	3000	E	1800	Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	2ulk insulation
IW-001	Plasterboard	88.02	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	60.75	

/loor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Neighbour	timber - concrete 200mm	34.80			
Living / Dining / Kitchen/Outdoor Air	R2.0 - timber - concrete 200mm	9.20		R2.0	
Bedroom 1/Neighbour	carpet - concrete 200mm	17.30			Carpet 10 + rubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	7.50			Ceramic tile
Bedroom 2/Neighbour	carpet - concrete 200mm	10.40			Carpet 10 + rubber underlay 8

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2/Outdoor Air	R2.0 - carpet - concrete 200mm	4.00		R2.0	Carpet 10 + rubber underlay 8
Bedroom 3/Neighbour	carpet - concrete 200mm	7.90			Carpet 10 + rubber underlay 8
Bedroom 3/Outdoor Air	R2.0 - carpet - concrete 200mm	4.20		R2.0	Carpet 10 + rubber underlay 8
Hall / Bathroom/Neighbour	timber - concrete 200mm	18.00			
Hall / Bathroom/Neighbour	tiles - concrete 200mm	11.00			Ceramic tile
Roof Space/Living / Dining / Kitchen	R3.0 - concrete 200mm (RS over)	7.30		R3.0	
Roof Space/Bedroom 2	R3.0 - concrete 200mm (RS over)	9.00		R3.0	

Ceiling *type*

Location	Construction material/type	2ulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Roof Space/Living / Dining / Kitchen	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Neighbour/Bedroom 2	timber - concrete 200mm		No
Roof Space/Bedroom 2	R3.0 - concrete 200mm (RS over)	R3.0	No
Neighbour/Bedroom 3	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^F)	Sealed/Unsealed
Living / Dining / Kitchen	17	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	9	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	5	Downlight		Sealed
Bedroom 3	5	Downlight		Sealed
Hall / Bathroom	10	Downlight		Sealed
Hall / Bathroom	2	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light
slate tile roof with no ceiling under		85	Dark

Explanatory notes

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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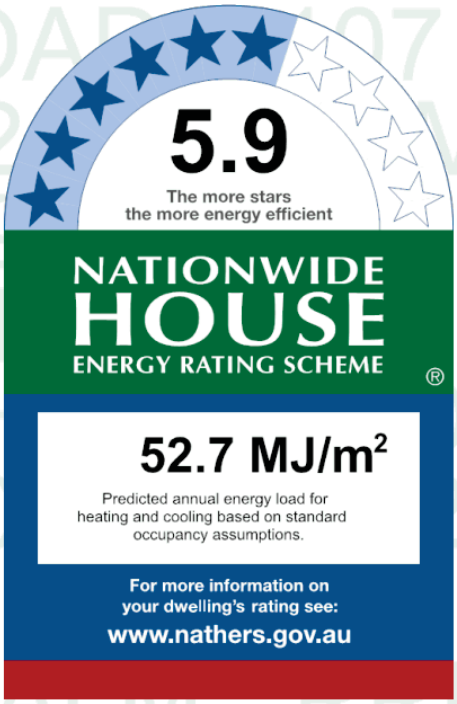
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
j ertical shading features	provides shading to the building 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532049

Generated on 18 Dec 2020 using AccuRate Sustainability V2.4.3.21



Property

Address	Unit 201, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	206.3	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	206.3	56
Garage		

Thermal performance

Heating	Cooling
29.8	**22.9**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=HxHACxlTo.
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?

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
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2400	4000	Sliding	66	W	None
Living / Dining / Kitchen	ALM-002-04 A	02	2400	4000	Sliding	66	W	None
Bedroom 1	ALM-001-04 A	03	1700	2400	Awning	10	E	None
Bedroom 1	ALM-002-04 A	04	2700	3100	Sliding	45	W	None
Bedroom 2	ALM-002-04 A	05	2400	2350	Sliding	45	E	None
Bedroom 3	ALM-001-04 A	06	700	1300	Awning	10	E	None
Bedroom 3	ALM-001-04 A	07	1700	2400	Awning	10	W	None
Bedroom 3	ALM-001-04 A	08	1700	1500	Awning	10	S	None
Media Room	ALM-001-04 A	09	1350	2400	Awning	10	N	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	3300	N	2200	Yes
Living / Dining / Kitchen	EW-004	2700	8300	W	1500	Yes
Living / Dining / Kitchen	EW-004	2700	1000	S		No
Bedroom 1	EW-004	2700	1200	S		No
Bedroom 1	EW-004	2700	2400	E		No
Bedroom 1	EW-004	2700	5000	S		No
Bedroom 1	EW-004	2700	4300	W		No
Bedroom 2	EW-004	2700	3100	E	1500	Yes
Bedroom 3	EW-004	1350	3600	E		No
Bedroom 3	EW-004	2700	5500	S		No
Bedroom 3	EW-004	2700	2400	W		No
Bedroom 3	EW-004	2700	2000	S		No
Media Room	EW-004	2700	3000	N		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	94.50	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	102.87	
IW-006	Plasterboard	33.75	Glass fibre batt: R2.0

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Neighbour	timber - concrete 200mm	70.90			
Bedroom 1/Neighbour	carpet - concrete 200mm	27.00			Carpet 10 Orubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	7.40			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2/Neighbour	carpet - concrete 200mm	24.40			Carpet 10 Orubber underlay 8
Bedroom 2/Neighbour	tiles - concrete 200mm	5.40			Ceramic tile
Bedroom 3/Neighbour	carpet - concrete 200mm	29.50			Carpet 10 Orubber underlay 8
Bedroom 3/Neighbour	tiles - concrete 200mm	5.40			Ceramic tile
Media Room/Neighbour	timber - concrete 200mm	15.50			
Hall / Bathroom/Neighbour	timber - concrete 200mm	13.60			
Hall / Bathroom/Neighbour	tiles - concrete 200mm	7.20			Ceramic tile
Roof Space/Neighbour	R3.0 - concrete 200mm (RS over)	39.00		R3.0	
Roof Space/Neighbour	R3.0 - concrete 200mm (RS over)	23.80		R3.0	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	29	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	13	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	10	Downlight		Sealed
Bedroom 2	1	Ceiling exhaust fan	160	Sealed
Bedroom 3	13	Downlight		Sealed
Bedroom 3	1	Ceiling exhaust fan	160	Sealed
Media Room	5	Downlight		Sealed
Hall / Bathroom	9	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light
slate tile roof with no ceiling under		85	Dark

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 uni+ue climate qone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. zhe actual energy consumption of a home may vary significantly fromthe 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 re+uirements 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. zhe higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

zo ensure the NatHERS Certificate is of a high +uality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Trganisation (AAT).

Australian Capital zerritory (ACz) 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 ACz licensing register

AATs have specific +uality assurance processes in place, and continuing professional development re+uirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of +uality assurance or any ongoing training re+uirements.

Any +uestions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these +uestions or concerns, the AAT specified on the front of this certificate should be contacted.

Disclaimer

zhe 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 zechnical Notes to produce a NatHERS Certificate.

zhe 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 fromthe assessor.

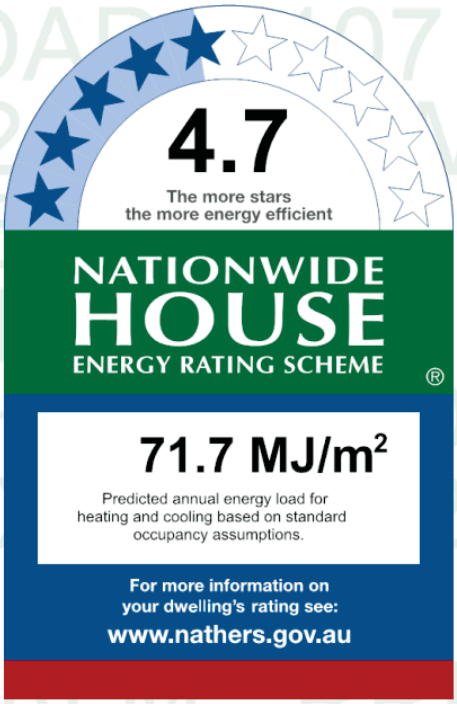
Glossary

Annual energy load	the predicted amount of energy re+uired 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 re+uire 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 qone within a dwelling that is expected to re+uire 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 graqing 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 10me.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 me.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horiqontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies fromupper 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 zechnical 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 subse+uently released inward. SHGC is expressed as a number between 0 and 1. zhe 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. zhe lower the U-value, the better the insulating ability.
Unconditioned	a qone within a dwelling that is assumed to not re+uire 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532056

Generated on 18 Dec 2020 using AccuRate Sustainability V2.4.3.21



Property

Address	Unit 202, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	191.4	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	191.4	56
Garage		

Thermal performance

Heating	Cooling
42.7 MJ/m^2	29.1 MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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

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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
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	1400	2200	Sliding	45	N	None
Living / Dining / Kitchen	ALM-001-04 A	02	1700	3000	Awning	10	E	None
Living / Dining / Kitchen	ALM-002-04 A	03	2400	4200	Sliding	60	W	None
Living / Dining / Kitchen	ALM-002-04 A	04	2400	4200	Sliding	60	W	None
Bedroom 1	ALM-002-04 A	05	2400	600	Louvre	90	W	None
Bedroom 1	ALM-002-04 A	06	2400	2900	Sliding	45	W	None
Bedroom 2	ALM-002-04 A	07	2400	3300	Sliding	45	E	None
Bedroom 3	ALM-002-04 A	08	2400	2350	Sliding	45	E	None
Media Room	ALM-001-04 A	10	1700	3000	Awning	10	W	None
Hall / Bathroom	ALM-001-04 A	11	1700	2400	Awning	10	S	None
Study	ALM-002-04 A	12	2400	1050	Casement	90	E	None
Study	ALM-002-04 A	13	2400	900	Louvre	90	E	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	2700	2300	N	1500	Yes
Living / Dining / Kitchen	EW-004	2700	5600	E		No
Living / Dining / Kitchen	EW-004	2700	9100	W	5000	Yes
Bedroom 1	EW-004	2700	4000	W	3900	Yes
Bedroom 2	EW-004	2700	3500	E	1500	Yes
Bedroom 2	EW-004	2700	500	W		No
Bedroom 3	EW-004	2700	3100	E	1500	Yes
Media Room	EW-004	2700	5000	W		No
Hall / Bathroom	EW-004	2700	3000	S		No
Study	EW-004	2700	2000	E	1000	Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	109.35	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	110.43	
IW-006	Plasterboard	15.39	Glass fibre batt: R2.0

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Neighbour	timber - concrete 200mm	58.70			
Bedroom 1/Neighbour	carpet - concrete 200mm	22.90			Carpet 10 Orubber underlay 8
Bedroom 1/Neighbour	tiles - concrete 200mm	7.30			Ceramic tile
Bedroom 2/Neighbour	carpet - concrete 200mm	22.00			Carpet 10 Orubber underlay 8
Bedroom 2/Neighbour	tiles - concrete 200mm	8.40			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 3/Neighbour	carpet - concrete 200mm	19.10			Carpet 10 Orubber underlay 8
Bedroom 3/Neighbour	tiles - concrete 200mm	4.60			Ceramic tile
Media Room/Neighbour	timber - concrete 200mm	15.00			
Hall / Bathroom/Neighbour	timber - concrete 200mm	20.00			
Hall / Bathroom/Neighbour	tiles - concrete 200mm	4.10			Ceramic tile
Study/Neighbour	timber - concrete 200mm	9.30			
Roof Space/Neighbour	R3.0 - concrete 200mm (RS over)	6.90		R3.0	
Roof Space/+ utdoor Air	R3.0 - concrete 200mm (RS over)	9.00		R3.0	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	22	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	12	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Bedroom 2	12	Downlight		Sealed
Bedroom 2	1	Ceiling exhaust fan	160	Sealed
Bedroom 3	9	Downlight		Sealed
Bedroom 3	1	Ceiling exhaust fan	160	Sealed
Media Room	5	Downlight		Sealed
Hall / Bathroom	9	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed
Study	4	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R3.0 - Concrete slab 200mm	R3.0	30	Light
slate tile roof with no ceiling under		85	Dark

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.

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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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532064

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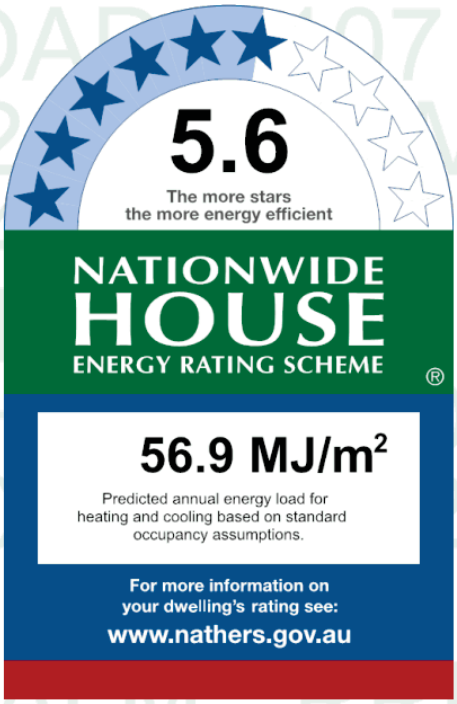

Property

Address	Unit 203, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	179.7	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	179.7	56
Garage		

Thermal performance

Heating	**Cooling**
30.2	**26.7**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=ehQNnorXE.
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?

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
ALM-001-04 A	Aluminium 5 SG Low Solar Gain Low-E	6.3	0.48	0.2B	0.42

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living 9Dining 9Vitchen	ALM-001-04 A	08	1400	2600	Sliding	46	N	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living 9Dining 9Vitchen	ALM-001-04 A	01	1400	1800	Sliding	46	W	None
Living 9Dining 9Vitchen	ALM-001-04 A	02	1400	6700	Sliding	46	N	None
Living 9Dining 9Vitchen	ALM-001-04 A	04	1400	1B00	Sliding	46	W	None
Living 9Dining 9Vitchen	ALM-001-04 A	06	1400	300	Louvre	B0	W	None
5edroom 8	ALM-001-04 A	03	1400	1B00	Sliding	46	N	None
5edroom 8	ALM-001-04 A	0/	1400	300	Louvre	B0	N	None
5edroom 8	ALM-001-04 A	07	1400	1700	Sliding	46	W	None
5edroom 1	ALM-001-04 A	0B	1400	1300	Sliding	46	E	None
5edroom 2	ALM-001-04 A	80	1400	1300	Sliding	46	E	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet9Concrete wall9Plasterboard	60	Medium	Glass fibre batt: R1.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living 9Dining 9Vitchen	EW-004	1/ 00	2600	N	8600	Yes
Living 9Dining 9Vitchen	EW-004	1/ 00	1800	W	6100	Yes
Living 9Dining 9Vitchen	EW-004	1/ 00	3200	N	8600	Yes
Living 9Dining 9Vitchen	EW-004	1/ 00	2600	W	4B00	Yes
5edroom 8	EW-004	1/ 00	4600	N	210	Yes
5edroom 8	EW-004	1/ 00	4800	W	100	Yes
5edroom 1	EW-004	1/ 00	2100	E	8600	Yes
5edroom 2	EW-004	1/ 00	2000	E	8600	Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-008	Plasterboard	800.B7	
IW-004	Fibre-cement sheet9Concrete wall9Plasterboard	43./ 8	
IW-003	Plasterboard	40./ /	Glass fibre batt: R1.0

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living 9Dining 9 Vitchen9Neighbour	timber - concrete 100mm	33.00			
5edroom 89Neighbour	carpet - concrete 100mm	17.60			Carpet 80 Orubber underlay 7
5edroom 89Neighbour	tiles - concrete 100mm	6.40			Ceramic tile
5edroom 19Neighbour	carpet - concrete 100mm	8B.30			Carpet 80 Orubber underlay 7
5edroom 19Neighbour	tiles - concrete 100mm	6.00			Ceramic tile
5edroom 29Neighbour	carpet - concrete 100mm	8/ .80			Carpet 80 Orubber underlay 7
5edroom 29Neighbour	tiles - concrete 100mm	6.00			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Pantry9Neighbour	timber - concrete 100mm	/ .10			
Hall 95athroom9Neighbour	timber - concrete 100mm	8/ .40			
Hall 95athroom9Neighbour	tiles - concrete 100mm	7.60			Ceramic tile
Roof Space9Neighbour	R2.0 - concrete 100mm (RS over)	14.B0		R2.0	
Roof Space9+ utdoor Air	R2.0 - concrete 100mm (RS over)	24.00		R2.0	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living 9Dining 9Vitchen	13	Downlight		Sealed
Living 9Dining 9Vitchen	8	Ceiling exhaust fan	830	Sealed
5edroom 8	82	Downlight		Sealed
5edroom 8	8	Ceiling exhaust fan	830	Sealed
5edroom 1	B	Downlight		Sealed
5edroom 1	8	Ceiling exhaust fan	830	Sealed
5edroom 2	B	Downlight		Sealed
5edroom 2	8	Ceiling exhaust fan	830	Sealed
Pantry	1	Downlight		Sealed
Hall 95athroom	80	Downlight		Sealed
Hall 95athroom	8	Ceiling exhaust fan	830	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
R2.0 - Concrete slab 100mm	R2.0	20	Light
slate tile roof with no ceiling under		76	Dark

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532072

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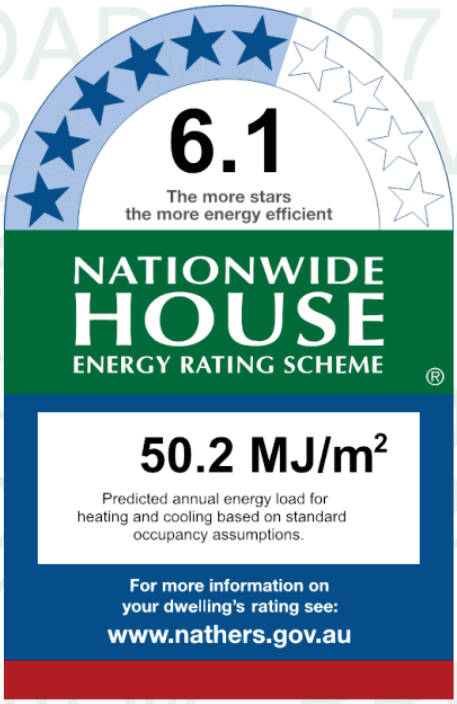

Property

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Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

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Prepared by	PBD Architects

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Assessed floor area (m²)*		**Exposure Type**
Conditioned*	80.8	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	80.8	56
Garage		

Thermal performance

Heating	Cooling
31.5	**18.8**
MJ/m²	MJ/m²

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest	Declaration completed: no conflicts

About the rating

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Verification

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National Construction Code (NCC) requirements

The Nqq-s reAuirements for NatHERS3ated houses are detailed in 1.20.( )a5)i5and 1.20.V of the Nqq Folume Two. Jor apartments the reAuirements are detailed in 8(.0 and 8V to 8Oof the Nqq Folume I ne.

9n Nqq 0(2: , these reAuirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. ReAuirements additional to the NatHERS assessment that must also be satisfied include, but are not limited toLinsulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting reAuirements. The Nqq and NatHERS Heating and qooling Boad Bimits)* ustralian Duilding qodes Doard Standard5are available at www.abcb.gov.au.

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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
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

0ocation	Window ID	Window no5	Height 3mm1	Width 3mm1	Window t6pe	7 pening N	7 rientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2700	2800	Sliding	45	W	None

* Refer to glossary.

0ocation	Window ID	Window no5	Height 3mm1	Width 3mm1	Window t6pe	7 pening N	7 rientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	02	2700	600	Louvre	90	W	None
Living / Dining / Kitchen	ALM-002-04 A	03	300	3400	Other	00	W	None
Bedroom 1	ALM-002-04 A	04	2700	1900	Sliding	45	W	None
Bedroom 1	ALM-002-04 A	05	2700	600	Louvre	90	W	None
Bedroom 1	ALM-002-04 A	06	300	2500	Other	00	W	None

Ooof 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					

Ooof window *schedule*

0ocation	Window ID	Window no5	7 pening N	Height 3mm1	Width 3mm1	7 rientation	7 utdoor shade	Indoor shade
No Data Available								

Sk6light *type and performance*

Sk6light ID	Sk6light description
No Data Available	

Sk6light *schedule*

0ocation	Sk6light ID	Sk6light) o5	Sk6light shaft length 3mm1	Area 3m-1	7 rientation	7 utdoor shade	Diffuser	Sk6light shaft reflectance
No Data Available								

yxternal door *schedule*

0ocation	Height 3mm1	Width 3mm1	7 pening N	7 rientation
No Data Available				

* Refer to glossary.

yxternal wall *type*

Wall ID	Wall t6pe	Solar absorptance	Wall shade 3colour1	Bulk insulation 3O-value1	Oeflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-012	Fibre-cement sheet/Concrete wall/Plasterboard	1	Light	Polystyrene expanded (k = 0.039): R0.5/Glass fibre batt: R1.0	No
EW-014	Retaining Concrete wall	50	Medium		No

yxternal wall *schedule*

0ocation	Wall ID	Height 3mm1	Width 3mm1	7 rientation	Horizontal shading feature* maximum projection 3mm1	Vertical shading feature 36es/no1
Living / Dining / Kitchen	EW-004	3200	4000	W	2000	Yes
Living / Dining / Kitchen	EW-012	3200	8500	S		No
Bedroom 1	EW-004	3200	3300	W	2000	Yes
Bedroom 1	EW-004	3200	2900	N	7600	Yes
Media Room	EW-004	3200	3300	E		No
Hall / Bathroom	EW-012	3200	4000	S		No
Basement Carpark	EW-014	3500	19600	N		No
Basement Carpark	EW-014	3500	41500	E		No
Basement Carpark	EW-014	3500	30000	S		No
Basement Carpark	EW-014	3500	33000	NW		No

Internal wall *type*

Wall ID	Wall t6pe	Area 3m-1	Bulk insulation
IW-001	Plasterboard	69.76	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	34.24	

Floor *type*

0ocation	Construction	Area 3m-1	Sub-floor ventilation	Added insulation 3O-value1	Covering
Living / Dining / Kitchen/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	35.50		R2.5	
Bedroom 1/Basement Carpark	R2.0 - BZ - carpet - concrete 200mm	14.50		R2.0	Carpet 10 + rubber underlay 8
Bedroom 1/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	7.60		R2.0	Ceramic tile
Media Room/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	13.80		R2.5	
Hall / Bathroom/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	5.40		R2.5	
Hall / Bathroom/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	4.00		R2.0	Ceramic tile
Basement Carpark/Ground	bare - concrete 200mm	999.00			

* Refer to glossary.

Ceiling *type*

0ocation	Construction material/t6pe	Bulk insulation O-value 3ma6 include edge batt values1	Oeflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Neighbour/Media Room	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No
Living / Dining / Kitchen/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Bedroom 1/Basement Carpark	R2.0 - BZ - carpet - concrete 200mm	R2.0	No
Bedroom 1/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	R2.0	No
Media Room/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Hall / Bathroom/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Hall / Bathroom/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	R2.0	No
Neighbour/Basement Carpark	timber - concrete 200mm		No

Ceiling *penetrations**

0ocation	Quantit6	T6pe	Diameter 3mm1	Sealed/unsealed
Living / Dining / Kitchen	14	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	8	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Media Room	4	Downlight		Sealed
Hall / Bathroom	4	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

0ocation	Quantit6	Diameter 3mm1
No Data Available		

Ooof *type*

Construction	Added insulation 3O-value1	Solar absorptance	Ooof shade
none - Concrete slab 200mm		30	Light

* Refer to glossary.

yxplanator6 notes

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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.

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Glossar6

Annual energ6 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.
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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.
) ational 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.
7pening 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
Oeflective 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.
Ooof 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 3SHGC1	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.
Sk6light (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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532080

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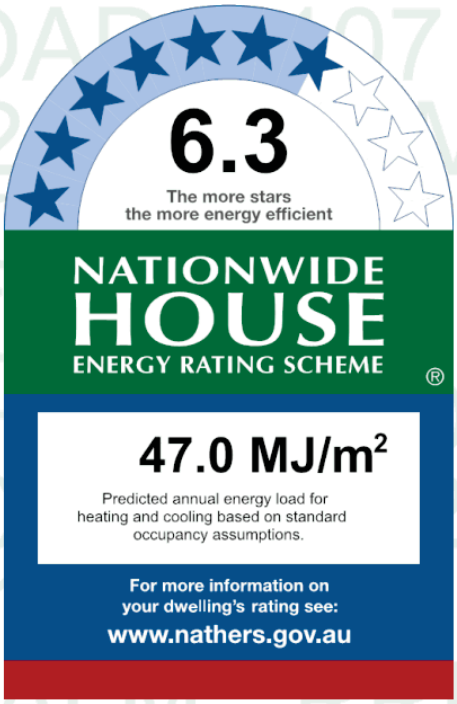

Property

Address	Unit G02, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	88.4	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	88.4	56
Garage		

Thermal performance

Heating	Cooling
18.4 MJ/m^2	28.6 MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=aiRgpdkBm.
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?

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
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	01	2700	600	Louvre	90	W	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Living / Dining / Kitchen	ALM-002-04 A	02	2700	3300	Sliding	45	W	None
Living / Dining / Kitchen	ALM-002-04 A	03	300	4000	Other	00	W	None
Bedroom 1	ALM-002-04 A	04	2700	600	Louvre	60	W	None
Bedroom 1	ALM-002-04 A	05	2700	2300	Sliding	45	W	None
Bedroom 1	ALM-002-04 A	06	300	2900	Other	00	W	None
Media Room	ALM-002-04 A	07	2700	600	Louvre	90	W	None
Media Room	ALM-002-04 A	08	2700	1800	Sliding	45	W	None
Media Room	ALM-002-04 A	09	500	2400	Other	00	W	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Fibre-cement sheet/Concrete wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-014	Retaining Concrete wall	50	Medium		No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Living / Dining / Kitchen	EW-004	3200	4000	W	1350	Yes
Bedroom 1	EW-004	3200	3500	W	1700	Yes
Bedroom 1	EW-004	3200	900	N		No
Bedroom 1	EW-004	3200	2400	E		No
Media Room	EW-004	3200	3600	W	1350	Yes
Media Room	EW-004	3200	2400	N	3700	Yes
Basement Carpark	EW-014	3500	19600	N		No
Basement Carpark	EW-014	3500	41500	E		No
Basement Carpark	EW-014	3500	30000	S		No
Basement Carpark	EW-014	3500	33000	NW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	66.24	
IW-004	Fibre-cement sheet/Concrete wall/Plasterboard	68.48	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living / Dining / Kitchen/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	38.50		R2.5	
Bedroom 1/Basement Carpark	R2.0 - BZ - carpet - concrete 200mm	19.40		R2.0	Carpet 10 + rubber underlay 8
Bedroom 1/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	8.20		R2.0	Ceramic tile
Media Room/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	13.00		R2.5	
Hall / Bathroom/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	7.50		R2.5	
Hall / Bathroom/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	1.80		R2.0	Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Basement Carpark/Ground	bare - concrete 200mm	999.00			

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Living / Dining / Kitchen	timber - concrete 200mm		No
Neighbour/Bedroom 1	timber - concrete 200mm		No
Neighbour/Media Room	timber - concrete 200mm		No
Neighbour/Hall / Bathroom	timber - concrete 200mm		No
Living / Dining / Kitchen/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Bedroom 1/Basement Carpark	R2.0 - BZ - carpet - concrete 200mm	R2.0	No
Bedroom 1/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	R2.0	No
Media Room/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Hall / Bathroom/Basement Carpark	R2.0 - BZ - timber - concrete 200mm	R2.5	No
Hall / Bathroom/Basement Carpark	R2.0 - BZ - tiles - concrete 200mm	R2.0	No
Neighbour/Basement Carpark	timber - concrete 200mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Living / Dining / Kitchen	14	Downlight		Sealed
Living / Dining / Kitchen	1	Ceiling exhaust fan	160	Sealed
Bedroom 1	9	Downlight		Sealed
Bedroom 1	1	Ceiling exhaust fan	160	Sealed
Media Room	4	Downlight		Sealed
Hall / Bathroom	4	Downlight		Sealed
Hall / Bathroom	1	Ceiling exhaust fan	160	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
none - Concrete slab 200mm		30	Light

* Refer to glossary.

Explanatory notes

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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).
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005532098

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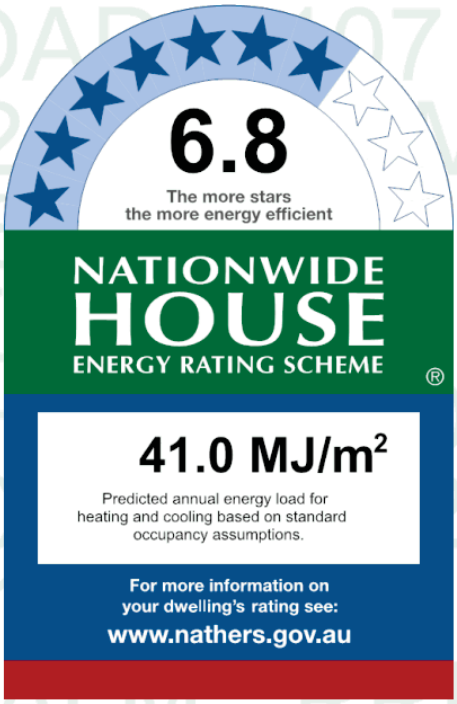

Property

Address	Unit G03, 1105-1107 Barrenjoey Road , Palm Beach , NSW , 2108
Lot/DP	Lot -
NCC Class*	2
Type	New Home

Plans

Main Plan	18/12/2020
Prepared by	PBD Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	90.2	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	90.2	56
Garage		

Thermal performance

Heating	Cooling
15.2 MJ/m^2	25.8 MJ/m^2

Accredited assessor

Name	Robert Mallindine
Business name	AGA Consultants Pty Ltd
Email	rob@agaconsultants.com.au
Phone	02 9977 2794
Accreditation No.	DMN/12/1475

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=FFbcYPVjy.
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?

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
ALM-002-02 M	Al Lhermally Mroken MDG Air Fill 4ow Solar Gain low-E -Clear	B.5	0.61	0.63	0.69

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
4iving 8Dining 8Vitchen	ALM-002-02 M	05	6100	6100	Sliding	2K	N	None
4iving 8Dining 8Vitchen	ALM-002-02 M	06	6100	B500	Sliding	2K	N	None
4iving 8Dining 8Vitchen	ALM-002-02 M	0B	K00	6100	j ther	00	N	None
4iving 8Dining 8Vitchen	ALM-002-02 M	02	K00	B500	j ther	00	N	None
4iving 8Dining 8Vitchen	ALM-002-02 M	0K	6100	2600	Sliding	33	W	None
4iving 8Dining 8Vitchen	ALM-002-02 M	03	K00	2600	j ther	00	W	None
Medroom 5	ALM-002-02 M	01	6100	5900	Sliding	2K	N	None
Medroom 5	ALM-002-02 M	09	6100	300	4ouvre	C0	N	None
Medroom 5	ALM-002-02 M	0O	K00	6200	j ther	00	N	None
: edia Room	ALM-002-02 M	50	6100	300	4ouvre	C0	W	None
: edia Room	ALM-002-02 M	55	6100	6B00	Sliding	2K	W	None
: edia Room	ALM-002-02 M	56	K00	6C00	j ther	00	W	None

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Fibre-cement sheet8Concrete wall8Plasterboard	K0	: edium	Glass fibre battYR6.0	No
EW-052	Retaining Concrete wall	K0	: edium		No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
4iving 8Dining 8Vitchen	EW-002	B600	3K00	N	100	I es
4iving 8Dining 8Vitchen	EW-002	B600	2200	W	9K0	I es
Medroom 5	EW-002	B600	B000	N	100	I es
: edia Room	EW-002	B600	2500	W	5000	I es
: edia Room	EW-002	B600	6500	N	KB00	I es
Masement Carpark	EW-052	BK00	5C300	N		No
Masement Carpark	EW-052	BK00	25K00	E		No
Masement Carpark	EW-052	BK00	B0000	S		No
Masement Carpark	EW-052	BK00	BB000	NW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
ZW-005	Plasterboard	3K.30	
ZW-002	Fibre-cement sheet8Concrete wall8Plasterboard	3K.69	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
4iving 8Dining 8Vitchen8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	BQ.10		R6.K	
Medroom 58Masement Carpark	R6.0 - M+ - carpet - concrete 600mm	59.10		R6.0	Carpet 50 q rubber underlay 9
Medroom 58Masement Carpark	R6.0 - M+ - tiles - concrete 600mm	1.00		R6.0	Ceramic tile
: edia Room8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	5K.B0		R6.K	
Hall 8Mathroom8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	2.10		R6.K	
Hall 8Mathroom8Masement Carpark	R6.0 - M+ - tiles - concrete 600mm	2.90		R6.0	Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Masement Carpark8Ground	bare - concrete 600mm	CCC.00			

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour84iving 8Dining 8Vitchen	timber - concrete 600mm		No
Neighbour8Medroom 5	timber - concrete 600mm		No
Neighbour8 edia Room	timber - concrete 600mm		No
Neighbour8Hall 8Mathroom	timber - concrete 600mm		No
4iving 8Dining 8Vitchen8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	R6.K	No
Medroom 58Masement Carpark	R6.0 - M+ - carpet - concrete 600mm	R6.0	No
Medroom 58Masement Carpark	R6.0 - M+ - tiles - concrete 600mm	R6.0	No
: edia Room8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	R6.K	No
Hall 8Mathroom8Masement Carpark	R6.0 - M+ - timber - concrete 600mm	R6.K	No
Hall 8Mathroom8Masement Carpark	R6.0 - M+ - tiles - concrete 600mm	R6.0	No
Neighbour8Masement Carpark	timber - concrete 600mm		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
4iving 8Dining 8Vitchen	5K	Downlight		Sealed
4iving 8Dining 8Vitchen	5	Ceiling exhaust fan	530	Sealed
Medroom 5	50	Downlight		Sealed
Medroom 5	5	Ceiling exhaust fan	530	Sealed
: edia Room	K	Downlight		Sealed
Hall 8Mathroom	2	Downlight		Sealed
Hall 8Mathroom	5	Ceiling exhaust fan	530	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
none - Concrete slab 600mm		B0	4ight

* 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 6 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 50 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 50m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 8 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 50m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 50 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 5, 6 or 2 buildings and attached Class 50a 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 5. 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.