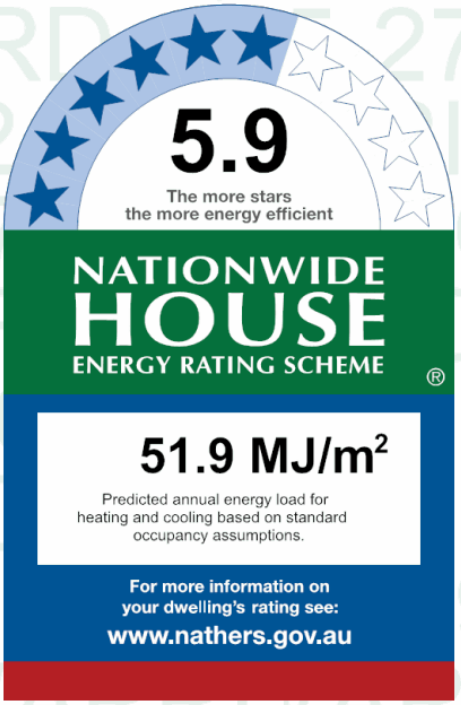
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866497-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit DW01, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	173.0	Suburban
Unconditioned*	60.0	**NatHERS climate zone**
Total	233.0	56
Garage	60.0	

Thermal performance

Heating	Cooling
32.5 MJ/m^2	19.4 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
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.

* Refer to glossary.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2400	3000	n/a	75	SW	Yes
Kitchen/Living	ATB-005-03 B	n/a	2700	2673	n/a	30	NW	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	75	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1149	n/a	90	NE	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	90	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	1038	n/a	30	SW	No
Bedroom 1	ATB-005-03 B	n/a	3450	600	n/a	30	NW	No
Bedroom 2	ATB-005-03 B	n/a	3450	600	n/a	30	NW	No
Bedroom 3	ATB-005-03 B	n/a	3450	1200	n/a	00	NW	No
Bedroom 3	ATB-005-03 B	n/a	2550	2673	n/a	30	NW	No
Bedroom 3	ATB-005-03 B	n/a	2550	1975	n/a	45	NE	No
Bedroom 3	ATB-005-03 B	n/a	857	1975	n/a	00	NE	No
Ens	ATB-005-03 B	n/a	3707	600	n/a	90	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 2	2400	5200	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-2	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-3	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	3695	SW	0	NO
Kitchen/Living	EW-1	2700	13400	NW	0	NO
Kitchen/Living	EW-1	2700	5500	NE	0	NO
Bedroom 1	EW-1	3800	3295	SW	1200	NO
Bedroom 1	EW-1	3450	5295	NW	25	NO
Bedroom 2	EW-1	3450	4190	NW	50	NO
Bedroom 3	EW-1	3450	3895	NW	75	NO
Bedroom 3	EW-1	3450	3295	NE	1500	NO
Bath	EW-1	3450	2195	NE	1500	NO
Ens	EW-1	3800	2195	SW	1200	NO
WC	EW-1	2700	1795	SW	0	NO
Garage 2	EW-2	2550	5500	SW	0	NO
Garage 2	EW-2	2550	11595	NW	0	NO
Grd area 1	EW-3	2550	2195	NE	0	NO
Grd area 2	EW-3	2550	7195	NW	0	NO
Grd area 2	EW-3	2550	3295	NE	0	NO

Internal wall *type*

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

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-1 - Brick, plasterboard		130.00	No Insulation
IW-2 - Concrete Block		44.00	No insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		89.00	No insulation
IW-4 - Cavity wall, direct fix plasterboard, single gap		14.00	Bulk Insulation, No Air Gap R2

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living /Garage 2	Timber Above Plasterboard 100mm	35.90		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd Entry/stair	Timber Above Plasterboard 100mm	8.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 1	Timber Above Plasterboard 100mm	2.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 2	Timber Above Plasterboard 100mm	17.40		No Insulation	Cork Tiles or Parquetry 8mm
Lift L2/Lift L1	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	16.80		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.00		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	12.50		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	15.00		No Insulation	Cork Tiles or Parquetry 8mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		No Insulation	Ceramic Tiles 8mm
Ens/WC	Timber Above Plasterboard 100mm	4.70		No Insulation	Ceramic Tiles 8mm
Lift L1/Lift - Grd	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
WC/Garage 2	Timber Above Plasterboard 100mm	4.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Lift - Grd	Concrete Slab on Ground 19mm	3.40	None	No Insulation	Ceramic Tiles 8mm
Garage 2	Concrete Slab on Ground 100mm	59.70	None	No Insulation	Bare
Grd Entry/stair	Concrete Slab on Ground 100mm	8.40	None	No Insulation	Carpet+Rubber Underlay 18mm
Grd area 1	Concrete Slab on Ground 100mm	6.80	None	No Insulation	Carpet+Rubber Underlay 18mm
Grd area 2	Concrete Slab on Ground 100mm	23.30	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Lift L2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Lift L1	Timber Above Plasterboard	No Insulation	No
WC	Timber Above Plasterboard	No Insulation	No
Lift - Grd	Timber Above Plasterboard	No Insulation	No
Garage 2	Plasterboard	No insulation	No
Garage 2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Grd Entry/stair	Timber Above Plasterboard	No Insulation	No
Grd area 1	Plasterboard	Bulk Insulation R3.5	No
Grd area 1	Timber Above Plasterboard	No Insulation	No
Grd area 2	Plasterboard	Bulk Insulation R3.5	No
Grd area 2	Timber Above Plasterboard	No Insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

* Refer to glossary.

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

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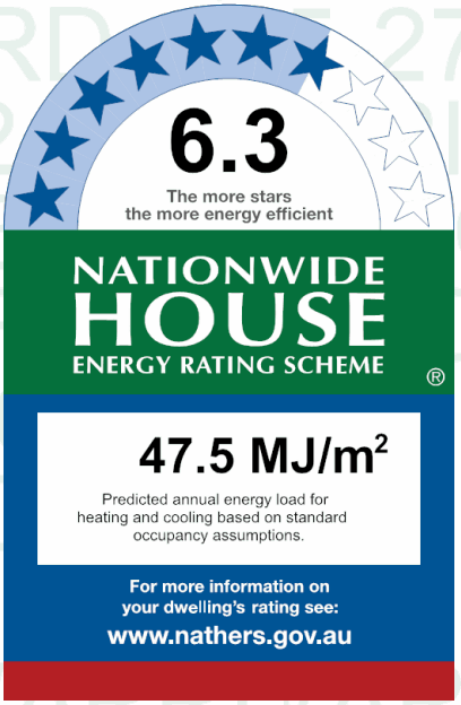

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MJ/m^2	MJ/m^2

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Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
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ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	75	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1149	n/a	90	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2673	n/a	30	SE	No
Kitchen/Living	ATB-005-03 B	n/a	2400	3000	n/a	75	SW	Yes
Bedroom 1	ATB-005-03 B	n/a	3450	600	n/a	30	SE	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	90	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	1038	n/a	30	SW	No
Bedroom 2	ATB-005-03 B	n/a	3450	600	n/a	30	SE	No
Bedroom 3	ATB-005-03 B	n/a	2550	1975	n/a	45	NE	No
Bedroom 3	ATB-005-03 B	n/a	857	1975	n/a	00	NE	No
Bedroom 3	ATB-005-03 B	n/a	3450	1200	n/a	00	SE	No
Bedroom 3	ATB-005-03 B	n/a	2550	2673	n/a	30	SE	No
Ens	ALM-003-01 A	n/a	3707	600	n/a	90	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
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Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 2	2400	5200	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-2	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-3	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	5500	NE	0	NO
Kitchen/Living	EW-1	2700	13400	SE	0	NO
Kitchen/Living	EW-1	2700	3695	SW	0	NO
Bedroom 1	EW-1	3450	5295	SE	0	NO
Bedroom 1	EW-1	3800	3295	SW	1200	NO
Bedroom 2	EW-1	3450	4190	SE	0	NO
Bedroom 3	EW-1	3450	3295	NE	1500	NO
Bedroom 3	EW-1	3450	3895	SE	0	NO
Bath	EW-1	3450	2195	NE	1500	NO
Ens	EW-1	3800	2195	SW	1200	NO
WC	EW-1	2700	1795	SW	75	NO
Garage 2	EW-2	2550	11595	SE	0	NO
Garage 2	EW-2	2550	5500	SW	0	NO
Grd area 1	EW-3	2550	2195	NE	0	NO
Grd area 2	EW-3	2550	3295	NE	0	NO
Grd area 2	EW-3	2550	7195	SE	0	NO

Internal wall *type*

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

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		89.00	No insulation
IW-2 - Concrete Block		44.00	No insulation
IW-3 - Cavity brick, plasterboard		112.00	No Insulation
IW-4 - Cavity wall, direct fix plasterboard, single gap		14.00	Bulk Insulation, No Air Gap R2.5
IW-5 - Brick, plasterboard		18.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living /Garage 2	Timber Above Plasterboard 100mm	35.90		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd Entry/stair	Timber Above Plasterboard 100mm	8.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 1	Timber Above Plasterboard 100mm	2.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 2	Timber Above Plasterboard 100mm	17.40		No Insulation	Cork Tiles or Parquetry 8mm
Lift L2/Lift L1	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	16.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.00		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	12.50		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	15.00		No Insulation	Cork Tiles or Parquetry 8mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		No Insulation	Ceramic Tiles 8mm
Ens/WC	Timber Above Plasterboard 100mm	4.70		No Insulation	Ceramic Tiles 8mm
Lift L1/Lift - Grd	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
WC/Garage 2	Timber Above Plasterboard 100mm	4.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Lift - Grd	Concrete Slab on Ground 19mm	3.40	None	No Insulation	Ceramic Tiles 8mm
Garage 2	Concrete Slab on Ground 100mm	59.70	None	No Insulation	Bare
Grd Entry/stair	Concrete Slab on Ground 100mm	8.40	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm
Grd area 1	Concrete Slab on Ground 100mm	6.80	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm
Grd area 2	Concrete Slab on Ground 100mm	23.30	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Lift L2	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Lift L1	Timber Above Plasterboard	No Insulation	No
WC	Timber Above Plasterboard	No Insulation	No
Lift - Grd	Timber Above Plasterboard	No Insulation	No
Garage 2	Plasterboard	No insulation	No
Garage 2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Grd Entry/stair	Timber Above Plasterboard	No Insulation	No
Grd area 1	Plasterboard	Bulk Insulation R3.5	No
Grd area 1	Timber Above Plasterboard	No Insulation	No
Grd area 2	Plasterboard	Bulk Insulation R3.5	No
Grd area 2	Timber Above Plasterboard	No Insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

* Refer to glossary.

Explanatory notes

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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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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.
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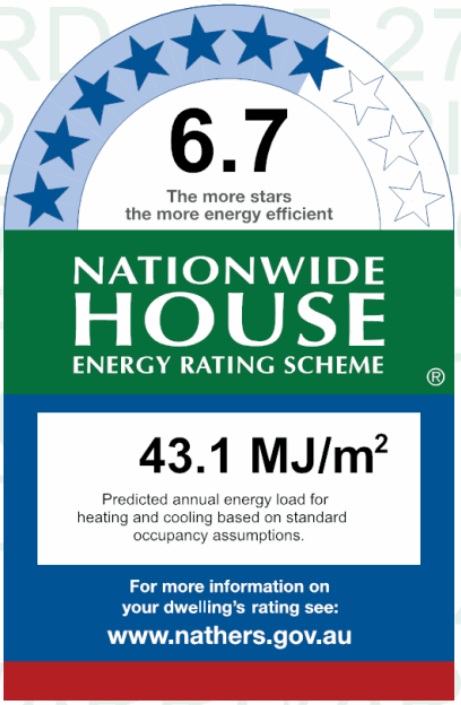
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides 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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866547-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit DW03, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
23.7	**19.5**
MJ/m^2	MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	
ABSA	
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 hstar.com.au/QR/Generate?p=QSAXyHDGM.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

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

* Refer to glossary.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	SW	Yes
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	30	NW	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	NE	No
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	SW	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	NW	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	NW	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	30	NW	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	NW	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	NE	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	NE	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	SW	0	NO
Garage/Store	EW-1	2550	13500	NW	0	NO
Garage/Store	EW-1	2550	3100	NW	0	NO
Garage/Store	EW-1	2550	5500	NE	0	NO
WC	EW-2	2700	895	SW	0	NO
Kitchen/Living	EW-2	2700	4595	SW	0	NO
Kitchen/Living	EW-2	2700	11800	NW	0	NO
Kitchen/Living	EW-2	2700	5500	NE	0	NO
Bath	EW-3	3800	1795	SW	1300	NO
Bedroom 1	EW-3	3800	3695	SW	1300	NO
Bedroom 1	EW-3	3800	3795	NW	0	NO
Bedroom 2	EW-3	3800	4190	NW	0	NO
Bedroom 3	EW-3	3800	3795	NW	0	NO
Bedroom 3	EW-3	3800	3295	NE	1200	NO
Ens	EW-3	3800	2195	NE	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866588-01

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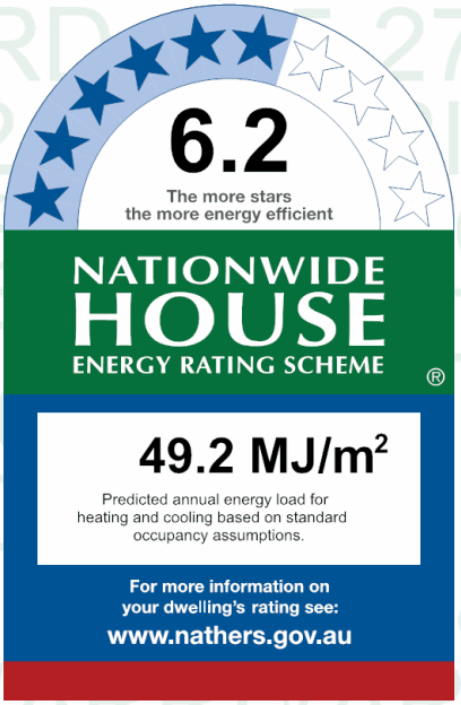

Property

Address	Unit DW04, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
25.4 MJ/m^2	23.8 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
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 hstar.com.au/QR/Generate?p=DbrmVUznf.
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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.

* Refer to glossary.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	NE	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	30	SE	No
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	SW	Yes
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	SE	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	SW	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	SW	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	SE	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	NE	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	NE	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	30	SE	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	SE	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	NE	0	NO
Garage/Store	EW-1	2550	3100	SE	0	NO
Garage/Store	EW-1	2550	13500	SE	0	NO
Garage/Store	EW-1	2550	5500	SW	0	NO
WC	EW-2	2700	895	SW	0	NO
Kitchen/Living	EW-2	2700	5500	NE	0	NO
Kitchen/Living	EW-2	2700	11800	SE	0	NO
Kitchen/Living	EW-2	2700	4595	SW	0	NO
Bath	EW-3	3800	1795	SW	1300	NO
Bedroom 1	EW-3	3800	3795	SE	0	NO
Bedroom 1	EW-3	3800	3695	SW	1300	NO
Bedroom 2	EW-3	3800	4190	SE	0	NO
Bedroom 3	EW-3	3800	3295	NE	1200	NO
Bedroom 3	EW-3	3800	3795	SE	0	NO
Ens	EW-3	3800	2195	NE	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.80		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866604-01

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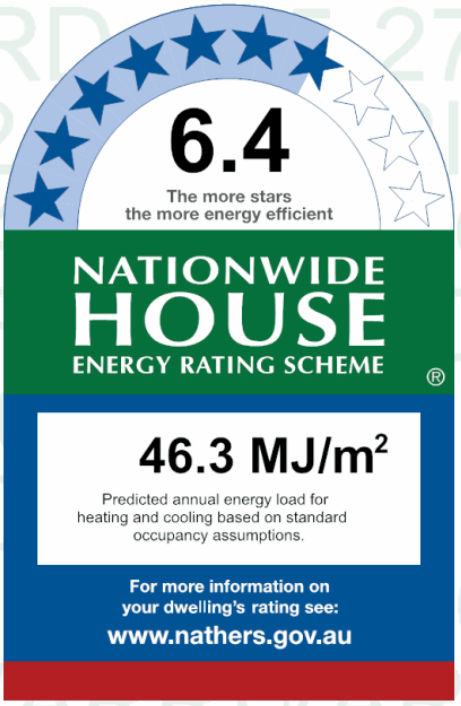

Property

Address	Unit DW05, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

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Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

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Assessed floor area (m^2)*		**Exposure Type**
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Total	213.0	56
Garage	91.0	

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Heating	Cooling
22.4 MJ/m^2	23.8 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

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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?

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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.

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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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	30	N	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	N	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	W	0	NO
Garage/Store	EW-1	2550	13500	N	0	NO
Garage/Store	EW-1	2550	3100	N	0	NO
Garage/Store	EW-1	2550	5500	E	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Kitchen/Living	EW-2	2700	11800	N	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 1	EW-3	3800	3795	N	0	NO
Bedroom 2	EW-3	3800	4190	N	0	NO
Bedroom 3	EW-3	3800	3795	N	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

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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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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866638-01

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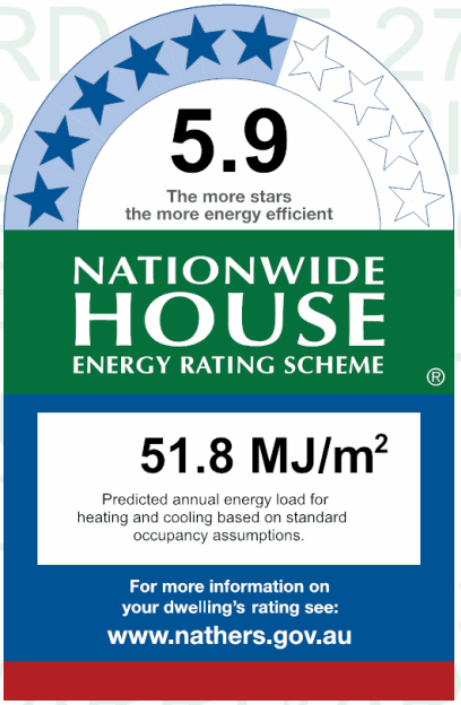

Property

Address	Unit DW06, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

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

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
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 hstar.com.au/QR/Generate?p=BLnVkWdHZ.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

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

* Refer to glossary.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	40	S	No
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	S	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	40	W	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	S	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	40	S	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	E	0	NO
Garage/Store	EW-1	2550	3100	S	0	NO
Garage/Store	EW-1	2550	13500	S	0	NO
Garage/Store	EW-1	2550	5500	W	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Kitchen/Living	EW-2	2700	11800	S	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3795	S	0	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 2	EW-3	3800	4190	S	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Bedroom 3	EW-3	3800	3795	S	0	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
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Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.80		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

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About this report

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866687-01

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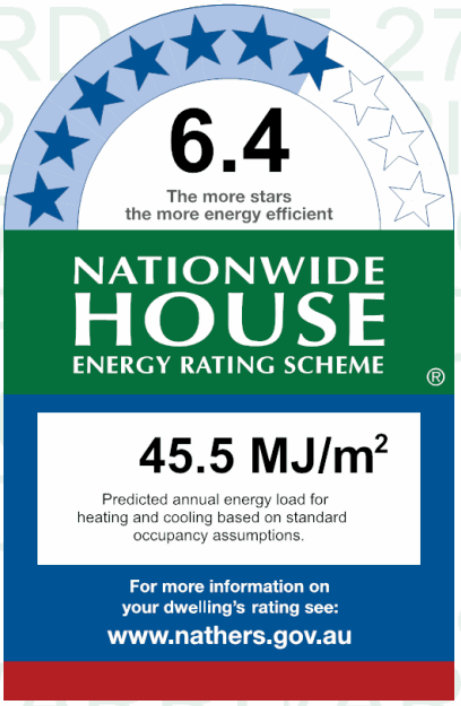

Property

Address	Unit DW07, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
22.4 MJ/m^2	23.1 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
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 hstar.com.au/QR/Generate?p=ohtDtlRyU.
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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.

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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.

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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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	40	N	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	N	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	W	0	NO
Garage/Store	EW-1	2550	13500	N	0	NO
Garage/Store	EW-1	2550	3100	N	0	NO
Garage/Store	EW-1	2550	5500	E	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Kitchen/Living	EW-2	2700	11800	N	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 1	EW-3	3800	3795	N	0	NO
Bedroom 2	EW-3	3800	4190	N	0	NO
Bedroom 3	EW-3	3800	3795	N	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

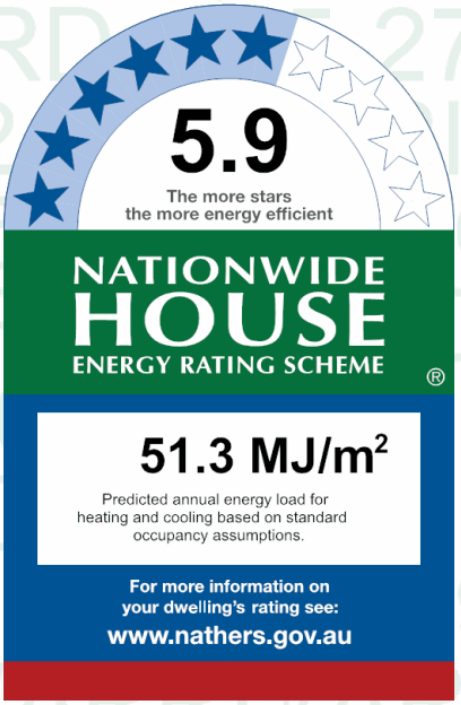
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866695-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit DW08, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
26.0	**25.3**
MJ/m^2	MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

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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

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Additional notes

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	40	S	No
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	40	S	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	W	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	40	S	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	40	S	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	E	0	NO
Garage/Store	EW-1	2550	3100	S	0	NO
Garage/Store	EW-1	2550	13500	S	0	NO
Garage/Store	EW-1	2550	5500	W	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Kitchen/Living	EW-2	2700	11800	S	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3795	S	0	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 2	EW-3	3800	4190	S	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Bedroom 3	EW-3	3800	3795	S	0	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.80		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

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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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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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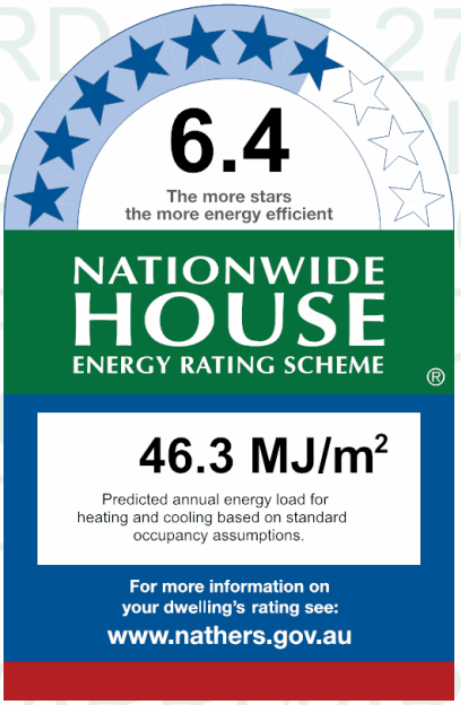
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS 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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866711-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit DW09, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	116.0	Suburban
Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
22.4 MJ/m^2	23.8 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	
ABSA	
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 hstar.com.au/QR/Generate?p=NrziJWffe.
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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.

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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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	30	N	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	30	N	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	N	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	W	0	NO
Garage/Store	EW-1	2550	13500	N	0	NO
Garage/Store	EW-1	2550	3100	N	0	NO
Garage/Store	EW-1	2550	5500	E	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Kitchen/Living	EW-2	2700	11800	N	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 1	EW-3	3800	3795	N	0	NO
Bedroom 2	EW-3	3800	4190	N	0	NO
Bedroom 3	EW-3	3800	3795	N	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

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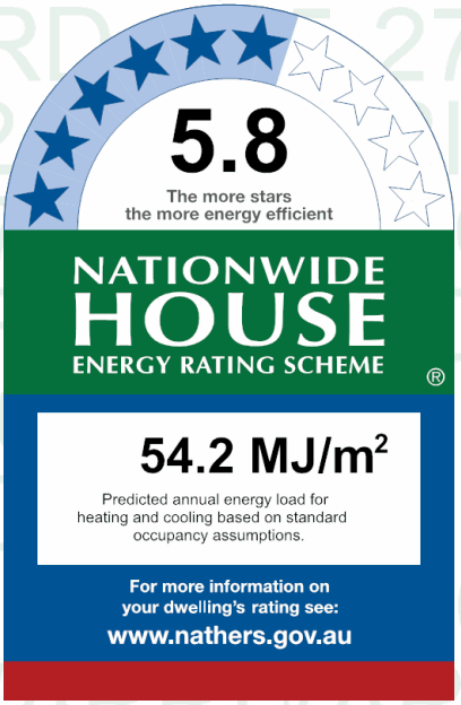
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866307-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



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NCC Class*	1A
Type	New Dwelling

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Prepared by	VIA Architects

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Unconditioned*	97.0	**NatHERS climate zone**
Total	213.0	56
Garage	91.0	

Thermal performance

Heating	Cooling
29.2	**25.0**
MJ/m^2	MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

About the rating

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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".

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Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

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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
ATB-005-03 B	ATB-005-03 B Al Thermally Broken A DG Argon Fill High Solar Gain low-E -Clear	2.9	0.44	0.44	0.44
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-005-03 B	n/a	2700	2700	n/a	65	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	1148	n/a	90	E	No
Kitchen/Living	ATB-005-03 B	n/a	2700	2770	n/a	40	S	No
Kitchen/Living	ATB-005-03 B	n/a	2700	600	n/a	30	S	No
Kitchen/Living	ATB-005-03 B	n/a	2700	600	n/a	30	S	No
Kitchen/Living	ATB-005-03 B	n/a	2400	4000	n/a	65	W	Yes
Bath	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	600	n/a	30	S	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	70	W	No
Bedroom 1	ATB-005-03 B	n/a	3707	1039	n/a	30	W	No
Bedroom 2	ATB-005-03 B	n/a	3707	600	n/a	30	S	No
Bedroom 3	ATB-005-03 B	n/a	2550	2050	n/a	45	E	No
Bedroom 3	ATB-005-03 B	n/a	857	2050	n/a	00	E	No
Bedroom 3	ATB-005-03 B	n/a	3407	2770	n/a	40	S	No
Bedroom 3	ATB-005-03 B	n/a	3407	1086	n/a	00	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage/Store	2400	5400	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage/Store	EW-1	2550	5500	E	0	NO
Garage/Store	EW-1	2550	3100	S	0	NO
Garage/Store	EW-1	2550	13500	S	0	NO
Garage/Store	EW-1	2550	5500	W	0	NO
WC	EW-2	2700	895	W	0	NO
Kitchen/Living	EW-2	2700	5500	E	0	NO
Kitchen/Living	EW-2	2700	11800	S	0	NO
Kitchen/Living	EW-2	2700	4595	W	0	NO
Bath	EW-3	3800	1795	W	1300	NO
Bedroom 1	EW-3	3800	3795	S	0	NO
Bedroom 1	EW-3	3800	3695	W	1300	NO
Bedroom 2	EW-3	3800	4190	S	0	NO
Bedroom 3	EW-3	3800	3295	E	1200	NO
Bedroom 3	EW-3	3800	3795	S	0	NO
Ens	EW-3	3800	2195	E	1200	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick		119.00	No Insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		72.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Store	Concrete Slab on Ground 100mm	91.30	None	No Insulation	Bare
WC/Garage/Store	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Ceramic Tiles 8mm
Kitchen/Living /Garage/Store	Timber Above Plasterboard 100mm	62.50		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Bath/WC	Timber Above Plasterboard 100mm	2.20		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	3.40		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.30		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	12.80		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage/Store	Plasterboard	No insulation	No
Garage/Store	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

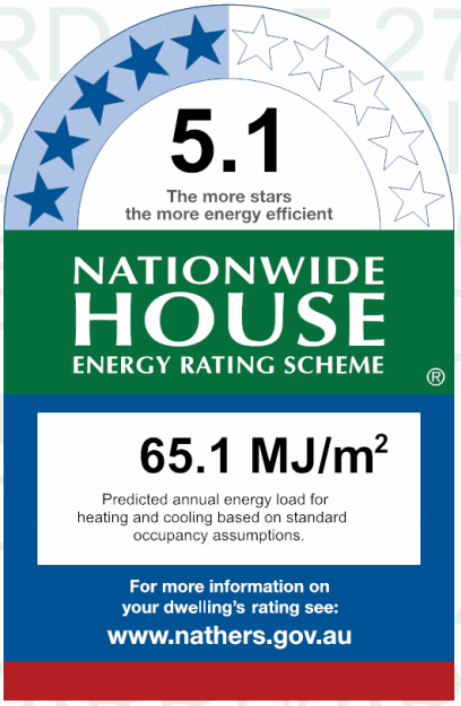
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004866349-01

Generated on 22 Dec 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit DW11, 25-27 Warriewood rd , Warriewood , NSW , 2102
Lot/DP	5464
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Warriewood Residential Development
Prepared by	VIA Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	168.0	Suburban
Unconditioned*	65.0	**NatHERS climate zone**
Total	233.0	56
Garage	60.0	

Thermal performance

Heating	Cooling
39.7	**25.4**
MJ/m^2	MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Organisation	ABSA
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 hstar.com.au/QR/Generate?p=eKNEkdaTe.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

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

* Refer to glossary.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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

If carpet noted as floor covering it may be replaced with any type.
Only the U and SHGC values should be considered NOT the glazing descriptions.
Downlights must not penetrate ceiling insulation

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
ATB-006-03 B	ATB-006-03 B Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear	2.9	0.51	0.51	0.51
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.51	0.51

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*
Kitchen/Living	ATB-006-03 B	n/a	2700	2700	n/a	75	E	No
Kitchen/Living	ATB-006-03 B	n/a	2700	1149	n/a	90	E	No
Kitchen/Living	ATB-006-03 B	n/a	2700	2673	n/a	40	S	No
Kitchen/Living	ATB-006-03 B	n/a	2400	3000	n/a	75	W	Yes
Bedroom 1	ATB-006-03 B	n/a	3450	600	n/a	30	S	No
Bedroom 1	ALM-003-01 A	n/a	3707	600	n/a	90	W	No
Bedroom 1	ATB-006-03 B	n/a	3707	1038	n/a	30	W	No
Bedroom 2	ATB-006-03 B	n/a	3450	600	n/a	30	S	No
Bedroom 3	ATB-006-03 B	n/a	2550	1975	n/a	45	E	No
Bedroom 3	ATB-006-03 B	n/a	857	1975	n/a	00	E	No
Bedroom 3	ATB-006-03 B	n/a	3450	1200	n/a	00	S	No
Bedroom 3	ATB-006-03 B	n/a	2550	2673	n/a	30	S	No
Bath	ATB-006-03 B	n/a	600	1200	n/a	70	N	No
Ens	ALM-003-01 A	n/a	3707	600	n/a	90	W	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 2	2400	5200	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-2	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-4	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-5	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	8655	N	0	NO
Kitchen/Living	EW-1	2700	5500	E	0	NO
Kitchen/Living	EW-1	2700	13400	S	0	NO
Kitchen/Living	EW-1	2700	3695	W	0	NO
Lift L2	EW-1	3450	1910	N	0	NO
Bedroom 1	EW-1	3450	5295	S	25	NO
Bedroom 1	EW-1	3800	3295	W	1200	NO
Bedroom 2	EW-1	3450	4190	S	50	NO
Bedroom 3	EW-1	3450	3295	E	1500	NO
Bedroom 3	EW-1	3450	3895	S	75	NO
Bath	EW-1	3450	2695	N	0	NO
Bath	EW-1	3450	2195	E	1500	NO
Upstairs	EW-1	3450	5950	N	0	NO
Ens	EW-1	3800	2195	W	1200	NO
Ens	EW-1	3450	2655	N	0	NO
Lift L1	EW-1	2700	1910	N	0	NO
WC	EW-1	2700	1795	W	0	NO
WC	EW-1	2700	2655	N	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Lift - Grd	EW-2	2550	1910	N	0	NO
Garage 2	EW-3	2550	11595	S	0	NO
Garage 2	EW-4	2550	5500	W	0	NO
Garage 2	EW-3	2550	6155	N	0	NO
Garage 2	EW-4	2550	3350	N	0	NO
Grd Entry/stair	EW-5	2550	3990	N	0	NO
Grd area 1	EW-2	2550	3195	N	0	NO
Grd area 1	EW-2	2550	2195	E	0	NO
Grd area 2	EW-2	2550	3295	E	0	NO
Grd area 2	EW-2	2550	7195	S	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		89.00	No insulation
IW-2 - Concrete Block		44.00	No insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		14.00	Bulk Insulation, No Air Gap R2.5

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living /Garage 2	Timber Above Plasterboard 100mm	35.90		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd Entry/stair	Timber Above Plasterboard 100mm	8.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 1	Timber Above Plasterboard 100mm	2.80		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Grd area 2	Timber Above Plasterboard 100mm	17.40		No Insulation	Cork Tiles or Parquetry 8mm
Lift L2/Lift L1	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	16.90		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	12.00		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	12.50		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm
Upstairs/Kitchen/Living	Timber Above Plasterboard 100mm	15.00		No Insulation	Cork Tiles or Parquetry 8mm
Ens/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		No Insulation	Ceramic Tiles 8mm
Ens/WC	Timber Above Plasterboard 100mm	4.70		No Insulation	Ceramic Tiles 8mm
Lift L1/Lift - Grd	Timber Above Plasterboard 100mm	3.40		No Insulation	Bare
WC/Garage 2	Timber Above Plasterboard 100mm	4.70		Bulk Insulation R2.5	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Lift - Grd	Concrete Slab on Ground 19mm	3.40	None	Bulk Insulation in Contact with Floor R1.5	Bare
Garage 2	Concrete Slab on Ground 100mm	59.70	None	No Insulation	Bare
Grd Entry/stair	Concrete Slab on Ground 100mm	8.40	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm
Grd area 1	Concrete Slab on Ground 100mm	6.80	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm
Grd area 2	Concrete Slab on Ground 100mm	23.30	None	Bulk Insulation in Contact with Floor R1.5	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Lift L2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Upstairs	Plasterboard	Bulk Insulation R3.5	No
Ens	Plasterboard	Bulk Insulation R3.5	No
Lift L1	Timber Above Plasterboard	No Insulation	No
WC	Timber Above Plasterboard	No Insulation	No
Lift - Grd	Timber Above Plasterboard	No Insulation	No
Garage 2	Plasterboard	No insulation	No
Garage 2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Grd Entry/stair	Timber Above Plasterboard	No Insulation	No
Grd area 1	Plasterboard	Bulk Insulation R3.5	No
Grd area 1	Timber Above Plasterboard	No Insulation	No
Grd area 2	Plasterboard	Bulk Insulation R3.5	No
Grd area 2	Timber Above Plasterboard	No Insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
No Data Available				

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

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).