Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006163687-03

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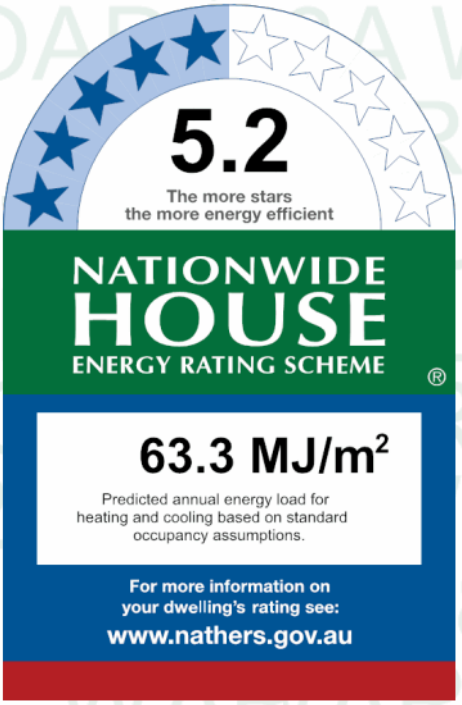

Property

Address	Unit Lot 2, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10-07-21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	129.0	Suburban
Unconditioned*	72.0	**NatHERS climate zone**
Total	202.0	56
Garage	62.0	

Thermal performance

Heating	Cooling
38.0 MJ/m^2	25.3 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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*
Study	ALM-004-01 A	n/a	2400	2240	n/a	45	SW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Study	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Stairs GF	ALM-004-01 A	n/a	2200	800	n/a	45	SW	No
Stairs GF	ALM-004-01 A	n/a	2200	800	n/a	45	NW	Yes
Stairs GF	ALM-004-01 A	n/a	2200	800	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	2200	800	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3434	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	399	n/a	45	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1000	1400	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	900	n/a	90	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	2240	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	500	n/a	45	SE	Yes
Pdr	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Butlers	ALM-004-01 A	n/a	2400	900	n/a	90	NE	No
Butlers	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1400	2100	n/a	45	SW	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Ensuite	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 1	ALM-004-01 A	n/a	1400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 1	ALM-003-01 A	n/a	2400	1000	n/a	90	SE	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	SW	No
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NW	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NW	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NE	No
Stairs FF	ALM-004-01 A	n/a	2350	800	n/a	45	SW	No
Stairs FF	ALM-004-01 A	n/a	2350	800	n/a	45	NW	Yes
Stairs FF	ALM-004-01 A	n/a	2350	800	n/a	45	NW	Yes
Void 1	ALM-004-01 A	n/a	2350	800	n/a	45	SW	No

* Refer to glossary.

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Laundry	2400	820	90	NE
Garage 1	2400	5100	90	SW
Kitchen/Living	2400	1000	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	No insulation	No
EW-2	Cavity BrickZ:4W2:1	0.50	Medium	No insulation	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-4	Cavity BrickZ:7W2:0	0.50	Medium	No insulation	No
EW-5	Cavity BrickZ:7W2:1	0.50	Medium	No insulation	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-6	Cavity BrickZ:7W2:2	0.50	Medium	No insulation	No
EW-7	Cavity BrickZ:8W2:0	0.50	Medium	No insulation	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Laundry	EW-1	2700	3000	NE	0	NO
Laundry	EW-1	2700	1645	SE	0	NO
Garage 1	EW-1	2700	6000	SW	0	YES
Garage 1	EW-1	2700	5100	NW	0	YES
Garage 1	EW-1	2700	145	NW	0	YES
Garage 1	EW-1	2700	6345	SE	0	NO
Stairs Basement	EW-1	2700	3314	SW	0	NO
Stairs Basement	EW-1	800	3600	NW	0	NO
Stairs Basement	EW-2	1900	3600	NW	0	NO
Stairs Basement	EW-1	2700	1495	NE	0	YES
Stairs Basement	EW-1	2700	2795	SE	0	YES
Study	EW-3	2700	2295	SW	600	NO
Study	EW-3	2700	3495	SE	0	NO
Stairs GF	EW-3	850	2195	SW	0	NO
Stairs GF	EW-4	1850	2195	SW	0	NO
Stairs GF	EW-3	850	3600	NW	0	NO
Stairs GF	EW-5	1850	3600	NW	0	NO
Stairs GF	EW-3	850	1200	NE	0	YES
Stairs GF	EW-6	1850	1200	NE	1500	YES
Kitchen/Living	EW-3	850	1095	SW	0	NO
Kitchen/Living	EW-7	1850	1095	SW	0	NO
Kitchen/Living	EW-3	2700	1495	NW	1200	YES
Kitchen/Living	EW-3	2700	1000	NE	3800	YES
Kitchen/Living	EW-3	2700	4900	NW	1500	YES
Kitchen/Living	EW-3	2700	500	SW	1100	YES
Kitchen/Living	EW-3	2700	2200	NW	400	NO
Kitchen/Living	EW-3	2700	500	NE	0	YES
Kitchen/Living	EW-3	2700	500	NW	0	YES
Kitchen/Living	EW-3	2700	900	NE	0	YES
Kitchen/Living	EW-3	2700	600	NW	0	YES
Kitchen/Living	EW-3	2700	2200	NE	0	NO
Kitchen/Living	EW-3	2700	600	SE	0	YES
Kitchen/Living	EW-3	2700	1000	NE	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	3800	SE	0	YES
Kitchen/Living	EW-3	2700	2395	SW	600	YES
Kitchen/Living	EW-3	2700	600	SE	4700	YES
Pdr	EW-3	2700	1790	SE	0	NO
Butlers	EW-3	2700	1695	NE	1700	YES
Butlers	EW-3	2700	2995	SE	0	NO
Bed 3	EW-3	2700	3900	SW	450	NO
Bed 3	EW-3	2700	200	NW	4550	YES
Bed 3	EW-3	2700	795	SW	650	YES
Bed 3	EW-3	2700	3395	SE	450	NO
Bed 2	EW-3	2700	3290	SE	450	NO
Ensuite	EW-3	2700	1700	NE	1250	YES
Ensuite	EW-3	2700	2895	SE	450	NO
Bed 1	EW-3	2700	3800	NW	450	YES
Bed 1	EW-3	2700	4100	NE	450	NO
Bed 1	EW-3	2700	3095	SE	450	YES
Bath	EW-3	2700	500	SW	5550	YES
Bath	EW-3	2700	1000	NW	200	YES
Bath	EW-3	2700	600	SW	2050	YES
Bath	EW-3	2700	1800	NW	0	NO
Bath	EW-3	2700	500	NE	0	YES
Bath	EW-3	2700	1000	NW	100	YES
Bath	EW-3	2700	1595	NE	450	YES
Stairs FF	EW-3	2700	2195	SW	450	NO
Stairs FF	EW-3	2700	3600	NW	450	NO
Stairs FF	EW-3	2700	1200	NE	450	YES
Void 2	EW-3	2700	1490	NW	450	YES
Void 1	EW-3	2700	1095	SW	450	NO
Void 1	EW-3	2700	200	SE	5150	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity Brick		8.00	No insulation
IW-2 - Cavity brick		18.00	No Insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		185.00	No insulation

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	Concrete Slab on Ground 100mm	4.90	None	No Insulation	Bare
Garage 1	Concrete Slab on Ground 100mm	48.60	None	No Insulation	Bare
Lift Basement	Concrete Slab on Ground 100mm	1.30	None	No Insulation	Bare
Stairs Basement	Concrete Slab on Ground 100mm	8.60	None	No Insulation	Bare
Study/Garage 1	Concrete Above Plasterboard 150mm	3.60		Bulk Insulation R2	Carpet 10mm
Study	Suspended Concrete Slab 150mm	4.20	Enclosed	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Lift GF/Lift Basement	Concrete Above Plasterboard 19mm	1.30		Bulk Insulation R2	Carpet 10mm
Stairs GF/Garage 1	Concrete Above Plasterboard 19mm	0.70		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Stairs GF/Stairs Basement	Concrete Above Plasterboard 19mm	5.30		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Kitchen/Living /Garage 1	Concrete Above Plasterboard 150mm	25.20		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Kitchen/Living /Stairs Basement	Concrete Above Plasterboard 150mm	2.70		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	23.60	Enclosed	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Pdr/Garage 1	Concrete Above Plasterboard 19mm	2.80		Bulk Insulation R2	Carpet 10mm
Butlers/Garage 1	Concrete Above Plasterboard 19mm	4.90		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Bed 3/Study	Timber Above Plasterboard 19mm	6.30		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 19mm	6.60		Bulk Insulation R2.5	Carpet 10mm
Bed 3	Suspended Timber Floor 19mm	2.60	Very Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bed 2/Study	Timber Above Plasterboard 19mm	1.50		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	8.30		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Pdr	Timber Above Plasterboard 19mm	2.90		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Butlers	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	3.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Ensuite/Butlers	Timber Above Plasterboard 19mm	3.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Ensuite	Suspended Timber Floor 19mm	1.10	Very Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Robe/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	15.10		Bulk Insulation R2.5	Carpet 10mm
Bath	Suspended Timber Floor 19mm	6.20	Very Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Lift FF/Lift GF	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 19mm	6.10		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Void 2/Kitchen/Living	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Bare
Void 1/Kitchen/Living	Timber Above Plasterboard 19mm	1.10		Bulk Insulation R2.5	Bare
Corridor FF/Kitchen/Living	Timber Above Plasterboard 19mm	6.80		Bulk Insulation R2.5	Carpet 10mm
Corridor FF	Suspended Timber Floor 19mm	0.50	Very Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Laundry	Concrete	No insulation	No
Garage 1	Concrete, Plasterboard	Bulk Insulation R2	No
Garage 1	Concrete Above Plasterboard	Bulk Insulation R2	No
Lift Basement	Concrete Above Plasterboard	Bulk Insulation R2	No
Stairs Basement	Concrete Above Plasterboard	Bulk Insulation R2	No
Study	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
Pdr	Timber Above Plasterboard	Bulk Insulation R2.5	No
Butlers	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Robe	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Lift FF	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Void 2	Plasterboard	Bulk Insulation R4	No
Void 1	Plasterboard	Bulk Insulation R4	No
Corridor FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Laundry	1	Downlights - LED	150	Sealed
Study	1	Downlights - LED	150	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Pdr	1	Downlights - LED	150	Sealed
Butlers	1	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Robe	1	Downlights - LED	150	Sealed
Bed 1	5	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Corridor FF	2	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Concrete	No Added Insulation, No air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	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.
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Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006163703-03

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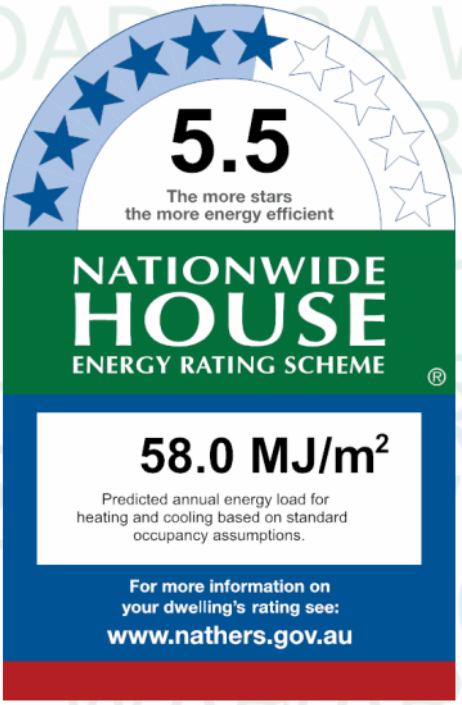

Property

Address	Unit Lot 3, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	125.0	Suburban
Unconditioned*	31.0	**NatHERS climate zone**
Total	155.0	56
Garage	23.0	

Thermal performance

Heating	Cooling
35.3 MJ/m^2	22.7 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=VrDnFcoTp.
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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 the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2800	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	SE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3495	NW	3900	YES
Kitchen/Living	EW-1	2700	1390	NW	1600	YES
Kitchen/Living	EW-1	2700	895	NE	0	YES
Kitchen/Living	EW-1	2700	900	NW	100	YES
Kitchen/Living	EW-1	2700	2200	NE	100	NO
Kitchen/Living	EW-1	2700	900	SE	100	YES
Kitchen/Living	EW-1	2700	4600	NE	100	YES
Kitchen/Living	EW-2	2700	8600	SE	200	NO
WC	EW-1	2700	1100	NW	1400	NO
WC	EW-1	2700	200	NE	4000	YES
WC	EW-1	2700	1595	SW	3600	NO
Media	EW-1	2700	2600	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	6100	YES
Stairs GF	EW-1	2700	895	SW	3600	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WIR	EW-1	2700	1895	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	5095	NW	450	NO
Bed 1	EW-1	2700	3495	NE	450	NO
Ensuite	EW-1	2700	2790	NE	450	NO
Bed 2	EW-1	2700	4495	NE	450	NO
Bed 2	EW-1	2700	3195	SE	450	NO
Bed 3	EW-1	2700	3795	SE	450	NO
Bed 3	EW-1	2700	3495	SW	450	NO
Bath	EW-1	2700	3090	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		153.00	No insulation
IW-2 - Cavity brick, plasterboard		22.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	23.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	48.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.60	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	7.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.60	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	4.60	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	7.90		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	7.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.20		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.20		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	5.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.50		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	5.20		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.
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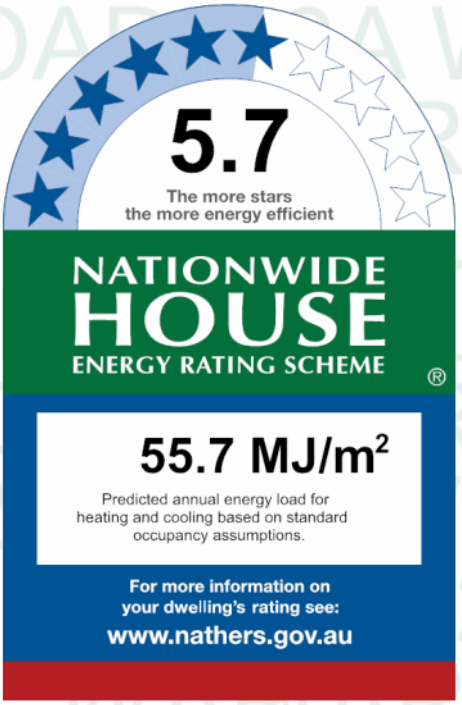

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Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2800	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	900	n/a	90	NE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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								

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3495	SW	3900	YES
Kitchen/Living	EW-1	2700	1390	SW	1600	YES
Kitchen/Living	EW-1	2700	895	NW	0	YES
Kitchen/Living	EW-1	2700	900	SW	100	YES
Kitchen/Living	EW-1	2700	2200	NW	100	NO
Kitchen/Living	EW-1	2700	900	NE	100	YES
Kitchen/Living	EW-1	2700	4600	NW	100	YES
Kitchen/Living	EW-2	2700	8600	NE	200	NO
WC	EW-1	2700	1100	SW	1400	NO
WC	EW-1	2700	200	NW	4000	YES
WC	EW-1	2700	1595	SE	3600	NO
Media	EW-1	2700	2600	SW	0	NO
Media	EW-1	2700	3095	NW	0	NO
Media	EW-1	2700	200	SE	6100	YES
Stairs GF	EW-1	2700	895	SE	3600	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WIR	EW-1	2700	2195	SW	450	NO
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	4795	SW	450	NO
Bed 1	EW-1	2700	3495	NW	450	NO
Ensuite	EW-1	2700	2790	NW	450	NO
Bed 2	EW-1	2700	4495	NW	450	NO
Bed 2	EW-1	2700	3195	NE	450	NO
Bed 3	EW-1	2700	3795	NE	450	NO
Bed 3	EW-1	2700	3495	SE	450	NO
Bath	EW-1	2700	3090	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		153.00	No insulation
IW-2 - Cavity brick, plasterboard		22.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	23.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	48.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.60	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	7.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.60	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	4.60	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	7.90		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	7.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	12.90		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.20		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.20		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	5.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.50		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	5.20		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

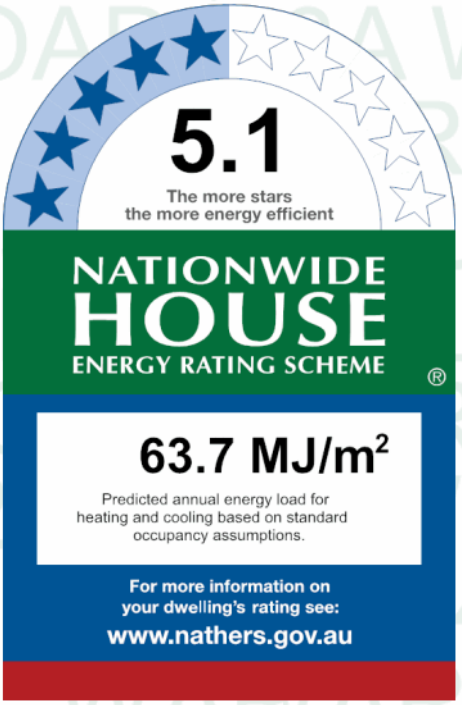
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006163745-03

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 5, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10-07-21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	125.0	Suburban
Unconditioned*	31.0	**NatHERS climate zone**
Total	155.0	56
Garage	23.0	

Thermal performance

Heating	Cooling
39.4 MJ/m^2	24.3 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

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	ALM-004-01 A	n/a	2400	2800	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	SE	Yes

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	2400	900	n/a	90	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	SW	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	SW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Single Skin Brick	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3495	NW	3900	YES
Kitchen/Living	EW-2	2700	8600	SE	200	NO
Kitchen/Living	EW-3	2700	4600	SW	100	YES
Kitchen/Living	EW-3	2700	900	SE	100	YES
Kitchen/Living	EW-3	2700	2200	SW	100	NO
Kitchen/Living	EW-3	2700	900	NW	100	YES
Kitchen/Living	EW-3	2700	895	SW	0	YES
Kitchen/Living	EW-3	2700	1390	NW	1600	YES
WC	EW-3	2700	1595	NE	3600	NO
WC	EW-3	2700	200	SW	4000	YES
WC	EW-3	2700	1100	NW	1400	NO
Media	EW-3	2700	200	NE	6100	YES
Media	EW-3	2700	3095	SW	0	NO
Media	EW-3	2700	2600	NW	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs GF	EW-3	2700	895	NE	3600	YES
WIR	EW-3	2700	4195	NE	450	NO
WIR	EW-3	2700	1895	NW	450	NO
Bed 1	EW-3	2700	3495	SW	450	NO
Bed 1	EW-3	2700	5095	NW	450	NO
Ensuite	EW-3	2700	2790	SW	450	NO
Bed 2	EW-3	2700	3195	SE	450	NO
Bed 2	EW-3	2700	4495	SW	450	NO
Bed 3	EW-3	2700	3495	NE	450	NO
Bed 3	EW-3	2700	3795	SE	450	NO
Bath	EW-3	2700	3090	NE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		22.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		50.00	Bulk Insulation, No Air Gap R2
IW-3 - Cavity wall, direct fix plasterboard, single gap		104.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	23.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	48.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.60	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	7.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.60	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	4.60	Very Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	7.90		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	7.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	13.00		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.20		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.20		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	5.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.60		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	5.20		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

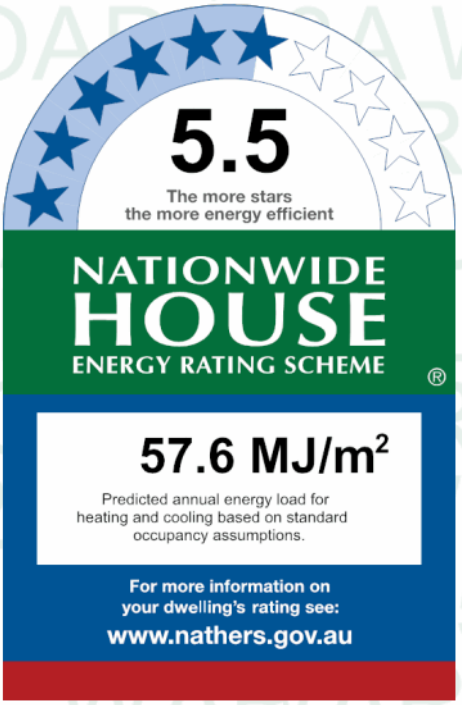
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006163752-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 6, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	125.0	Suburban
Unconditioned*	31.0	**NatHERS climate zone**
Total	155.0	56
Garage	23.0	

Thermal performance

Heating	Cooling
37.1 MJ/m^2	20.5 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

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	ALM-004-01 A	n/a	2400	2800	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1485	n/a	45	NE	Yes

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	2400	900	n/a	90	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	SE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	NW	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								

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3495	SW	3900	YES
Kitchen/Living	EW-1	2700	8600	NE	200	NO
Kitchen/Living	EW-1	2700	4600	SE	100	YES
Kitchen/Living	EW-1	2700	900	NE	100	YES
Kitchen/Living	EW-1	2700	2200	SE	100	NO
Kitchen/Living	EW-1	2700	900	SW	100	YES
Kitchen/Living	EW-1	2700	895	SE	0	YES
Kitchen/Living	EW-1	2700	1390	SW	1600	YES
WC	EW-1	2700	1595	NW	3600	NO
WC	EW-1	2700	200	SE	4000	YES
WC	EW-1	2700	1100	SW	1400	NO
Media	EW-1	2700	200	NW	6100	YES
Media	EW-2	2700	3095	SE	0	NO
Media	EW-1	2700	2600	SW	0	NO
Stairs GF	EW-1	2700	895	NW	3600	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WIR	EW-1	2700	4195	NW	450	NO
WIR	EW-1	2700	2195	SW	450	NO
Bed 1	EW-1	2700	3495	SE	450	NO
Bed 1	EW-1	2700	4795	SW	450	NO
Ensuite	EW-1	2700	2790	SE	450	NO
Bed 2	EW-1	2700	3195	NE	450	NO
Bed 2	EW-1	2700	4495	SE	450	NO
Bed 3	EW-1	2700	3495	NW	450	NO
Bed 3	EW-1	2700	3795	NE	450	NO
Bath	EW-1	2700	3090	NW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		22.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		154.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	23.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	48.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.60	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	7.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.60	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	4.60	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.20		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	7.90		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	7.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	13.00		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.20		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.20		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	5.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.60		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	5.20		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

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

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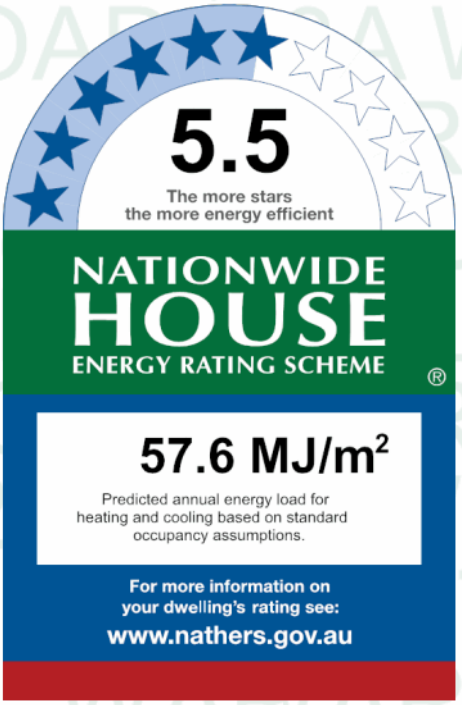
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides 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. 0006163778-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 7, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10-07-2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	167.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
38.3 MJ/m^2	19.3 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3600	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	No
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3800	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	1400	YES
Kitchen/Living	EW-1	2700	995	NE	0	YES
Kitchen/Living	EW-1	2700	1000	NW	0	YES
Kitchen/Living	EW-1	2700	2100	NE	100	NO
Kitchen/Living	EW-1	2700	1000	SE	0	YES
Kitchen/Living	EW-1	2700	1300	NE	0	YES
Kitchen/Living	EW-1	2700	600	SE	3700	YES
Kitchen/Living	EW-1	2700	3400	NE	600	YES
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	1200	NO
WC	EW-1	2700	200	NE	4700	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	2095	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	5795	NW	450	NO
Bed 1	EW-1	2700	3595	NE	450	NO
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
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Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
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WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed

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Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

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Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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. 0006163810-02

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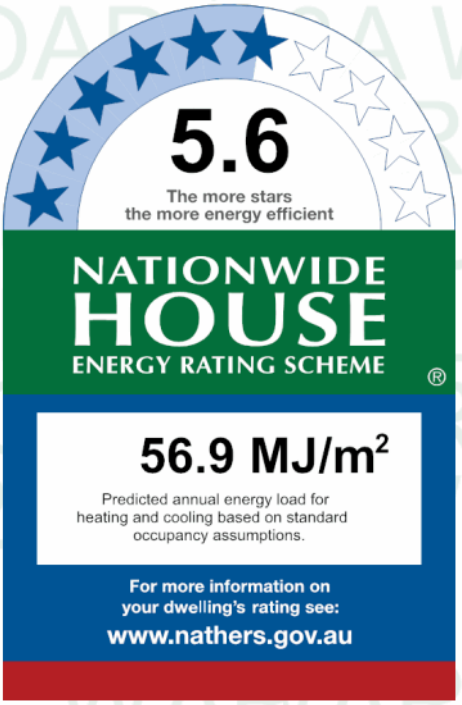

Property

Address	Unit Lot 8, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.7.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	140.0	Suburban	
Unconditioned*	35.0	**NatHERS climate zone**	
Total	175.0	56	
Garage	22.0		

Thermal performance

Heating	Cooling
34.7 MJ/m^2	22.1 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=RZUNQslqV.
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National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	No
Kitchen/Living	ALM-002-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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					

* Refer to glossary.

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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3800	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	1400	YES
Kitchen/Living	EW-1	2700	995	NW	0	YES
Kitchen/Living	EW-1	2700	1000	SW	0	YES
Kitchen/Living	EW-1	2700	2100	NW	100	NO
Kitchen/Living	EW-1	2700	1000	NE	0	YES
Kitchen/Living	EW-1	2700	1500	NW	0	YES
Kitchen/Living	EW-1	2700	500	NE	3500	YES
Kitchen/Living	EW-1	2700	3200	NW	500	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8700	NE	300	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	1200	NO
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	0	NO
Media	EW-1	2700	3095	NW	0	NO
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	2095	SW	450	YES
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	2400	SW	100	NO
Bed 1	EW-1	2700	1300	NW	100	YES
Bed 1	EW-1	2700	3400	SW	450	YES
Bed 1	EW-1	2700	3595	NW	450	NO
Bed 1	EW-1	2700	1300	SE	100	YES
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.70	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 19mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Bed 1	Suspended Timber Floor 19mm	3.30	Totally Open	No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.60		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	1.60	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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).
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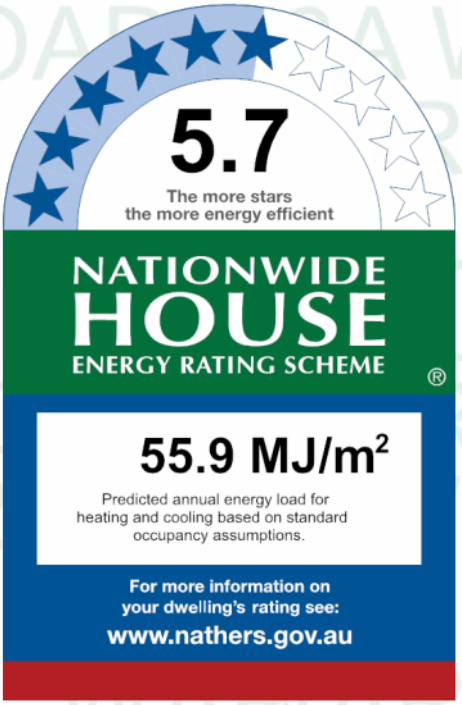
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006163919-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 9, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

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Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.21
Prepared by	Saturday Studio, Manly

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Total	169.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
34.6 MJ/m^2	21.3 MJ/m^2

About the rating

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Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=zDoQlsBrq.
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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?

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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.

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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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	800	n/a	45	SE	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3550	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	850	YES
Kitchen/Living	EW-1	2700	3095	NE	0	NO
Kitchen/Living	EW-1	2700	1300	NE	0	NO
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	750	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	450	NO
Media	EW-1	2700	400	NE	0	YES
Media	EW-1	2700	900	NW	0	YES
Media	EW-1	2700	2000	NE	0	NO
Media	EW-1	2700	900	SE	0	YES
Media	EW-1	2700	695	NE	0	YES
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	3195	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	4695	NW	450	NO
Bed 1	EW-1	2700	3595	NE	450	NO
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	50.20	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	11.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Plasterboard	Bulk Insulation R4	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

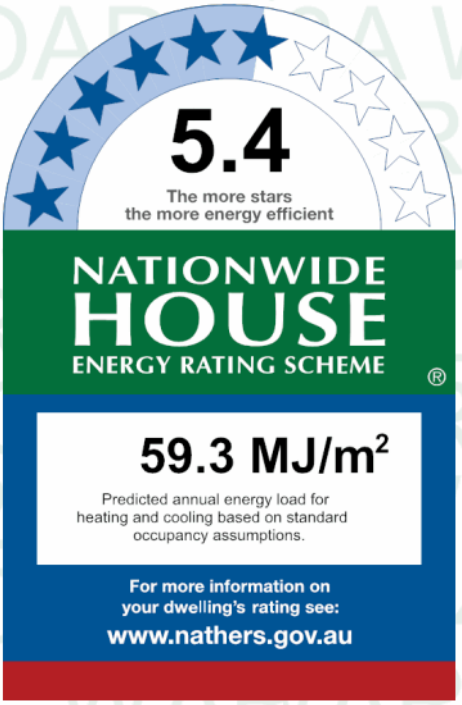
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006163943-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 10, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	32.0	**NatHERS climate zone**
Total	169.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
35.2 MJ/m^2	24.1 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

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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".

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

Window and glazed door *schedule*

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* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
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Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	No
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3800	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	1400	YES
Kitchen/Living	EW-1	2700	995	NW	0	YES
Kitchen/Living	EW-1	2700	1000	SW	0	YES
Kitchen/Living	EW-1	2700	2100	NW	100	NO
Kitchen/Living	EW-1	2700	1000	NE	0	YES
Kitchen/Living	EW-1	2700	1300	NW	0	YES
Kitchen/Living	EW-1	2700	600	NE	0	YES
Kitchen/Living	EW-1	2700	3400	NW	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	NE	200	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	1200	NO
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	0	NO
Media	EW-1	2700	3095	NW	0	NO
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	2095	SW	450	NO
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	5795	SW	450	NO
Bed 1	EW-1	2700	3595	NW	450	NO
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

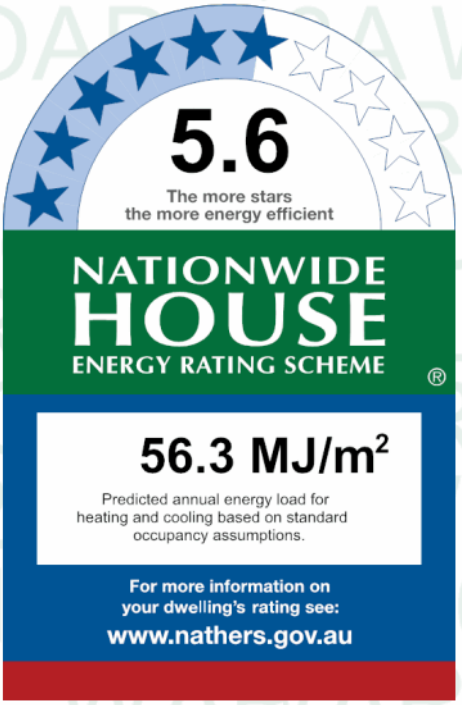
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006164008-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 11, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	140.0	Suburban	
Unconditioned*	32.0	**NatHERS climate zone**	
Total	172.0	56	
Garage	22.0		

Thermal performance

Heating	Cooling
35.2 MJ/m^2	21.0 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3800	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	1400	YES
Kitchen/Living	EW-1	2700	995	NE	0	YES
Kitchen/Living	EW-1	2700	1000	NW	0	YES
Kitchen/Living	EW-1	2700	2100	NE	100	NO
Kitchen/Living	EW-1	2700	1000	SE	0	YES
Kitchen/Living	EW-1	2700	1300	NE	0	YES
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	1200	NO
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	2095	NW	450	YES
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	2400	NW	100	NO
Bed 1	EW-1	2700	1300	NE	100	YES
Bed 1	EW-1	2700	3400	NW	450	YES
Bed 1	EW-1	2700	3595	NE	450	NO
Bed 1	EW-1	2700	1300	SW	100	YES
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 19mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Bed 1	Suspended Timber Floor 19mm	3.30	Totally Open	No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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.

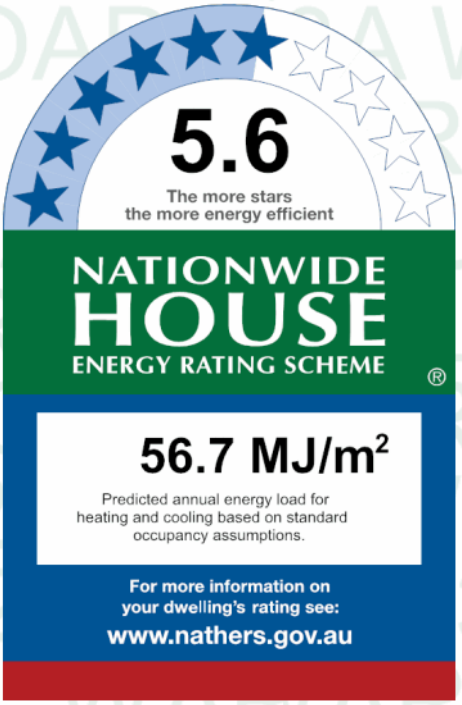
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006164032-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 12, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	166.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
36.5 MJ/m^2	20.2 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	690	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3550	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	850	YES
Kitchen/Living	EW-1	2700	3095	NW	0	NO
Kitchen/Living	EW-1	2700	1300	NW	0	NO
Kitchen/Living	EW-1	2700	600	NE	0	YES
Kitchen/Living	EW-1	2700	3400	NW	0	YES
Kitchen/Living	EW-3	2700	8600	NE	300	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	750	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	450	NO
Media	EW-1	2700	400	NW	0	YES
Media	EW-1	2700	900	SW	0	YES
Media	EW-1	2700	2000	NW	0	NO
Media	EW-1	2700	900	NE	0	YES
Media	EW-1	2700	695	NW	0	YES
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	3195	SW	450	NO
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	4695	SW	450	NO
Bed 1	EW-1	2700	3595	NW	450	NO
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	50.20	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	11.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Plasterboard	Bulk Insulation R4	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

Explanatory notes

About this report

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

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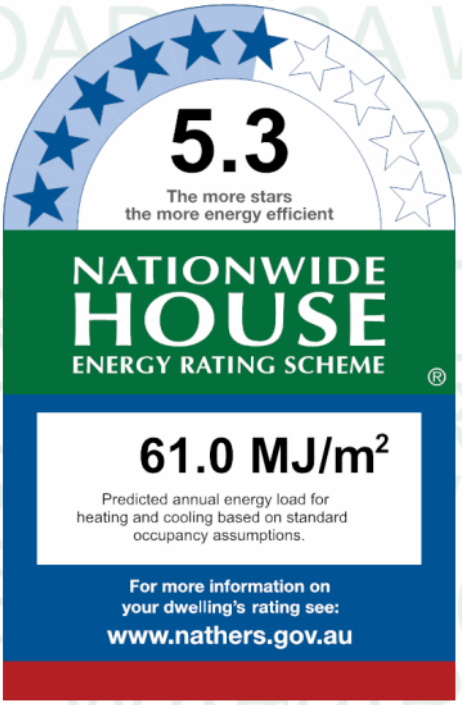
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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. 0006164065-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 13, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	167.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
37.0 MJ/m^2	24.0 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	No
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3800	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	1400	YES
Kitchen/Living	EW-1	2700	995	NE	0	YES
Kitchen/Living	EW-1	2700	1000	NW	0	YES
Kitchen/Living	EW-1	2700	2100	NE	100	NO
Kitchen/Living	EW-1	2700	1000	SE	0	YES
Kitchen/Living	EW-1	2700	1300	NE	0	YES
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	1200	NO
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	2095	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	5795	NW	450	NO
Bed 1	EW-1	2700	3595	NE	450	NO
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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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. 0006164115-02

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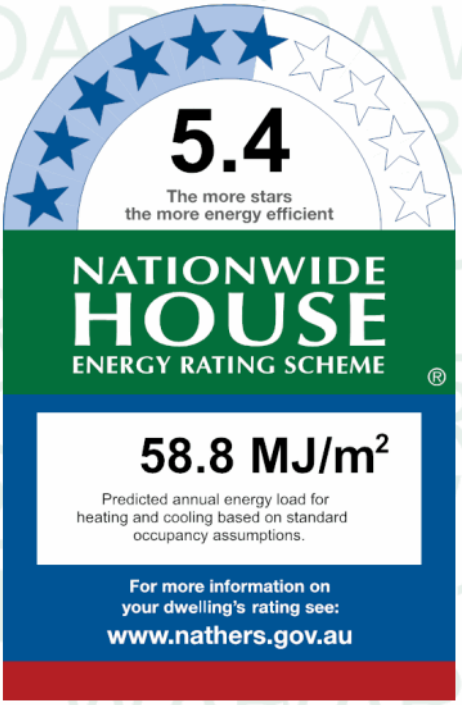

Property

Address	Unit Lot 14, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	139.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	170.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
37.7 MJ/m^2	21.1 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=tDcqVcPnL.
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The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

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

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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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3800	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	1400	YES
Kitchen/Living	EW-1	2700	995	NW	0	YES
Kitchen/Living	EW-1	2700	1000	SW	0	YES
Kitchen/Living	EW-1	2700	2100	NW	100	NO
Kitchen/Living	EW-1	2700	1000	NE	0	YES
Kitchen/Living	EW-1	2700	1300	NW	0	YES
Kitchen/Living	EW-1	2700	600	NE	0	YES
Kitchen/Living	EW-1	2700	3400	NW	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	NE	300	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	1200	NO
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	0	NO
Media	EW-1	2700	3095	NW	0	NO
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	2095	SW	450	YES
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	2300	SW	100	NO
Bed 1	EW-1	2700	1300	NW	200	YES
Bed 1	EW-1	2700	3500	SW	450	YES
Bed 1	EW-1	2700	3595	NW	450	NO
Bed 1	EW-1	2700	1300	SE	100	YES
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 19mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Bed 1	Suspended Timber Floor 19mm	3.20	Totally Open	No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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.
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NatHERS Certificate No. 0006164149-02

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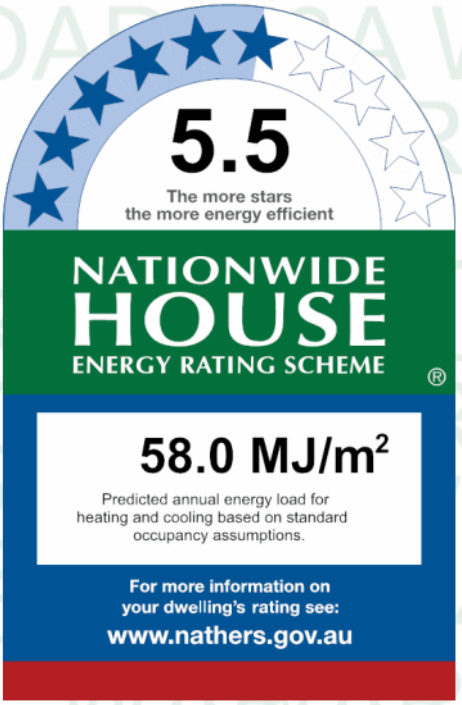

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Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=aCxQajskL.
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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?

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	800	n/a	45	SE	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3550	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	850	YES
Kitchen/Living	EW-1	2700	3095	NE	0	NO
Kitchen/Living	EW-1	2700	1300	NE	0	NO
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	750	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	450	NO
Media	EW-1	2700	400	NE	0	YES
Media	EW-1	2700	900	NW	0	YES
Media	EW-1	2700	2000	NE	0	NO
Media	EW-1	2700	900	SE	0	YES
Media	EW-1	2700	695	NE	0	YES
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	3195	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	4695	NW	450	NO
Bed 1	EW-1	2700	3595	NE	450	NO
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	50.20	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	11.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

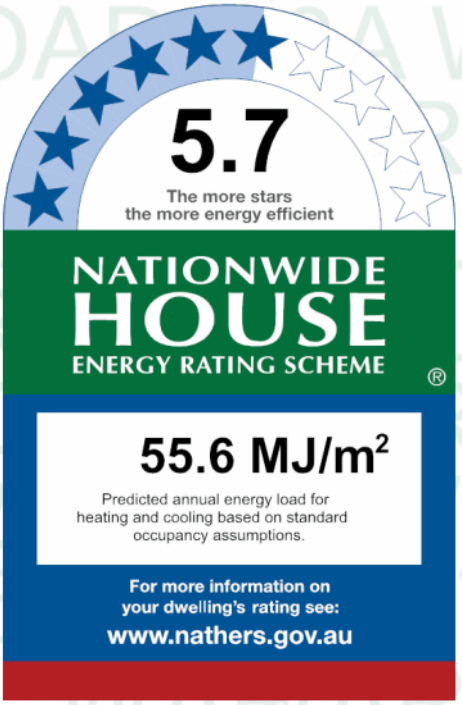
Glossary

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).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006164172-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 16, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 26.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	166.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
34.8 MJ/m^2	20.8 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	690	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3550	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	850	YES
Kitchen/Living	EW-1	2700	3095	NW	0	NO
Kitchen/Living	EW-1	2700	1300	NW	0	NO
Kitchen/Living	EW-1	2700	600	NE	0	YES
Kitchen/Living	EW-1	2700	3400	NW	0	YES
Kitchen/Living	EW-3	2700	8600	NE	300	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	750	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	450	NO
Media	EW-1	2700	400	NW	0	YES
Media	EW-1	2700	900	SW	0	YES
Media	EW-1	2700	2000	NW	0	NO
Media	EW-1	2700	900	NE	0	YES
Media	EW-1	2700	695	NW	0	YES
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	3195	SW	450	NO
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	4695	SW	450	NO
Bed 1	EW-1	2700	3595	NW	450	NO
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	50.20	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	11.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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.

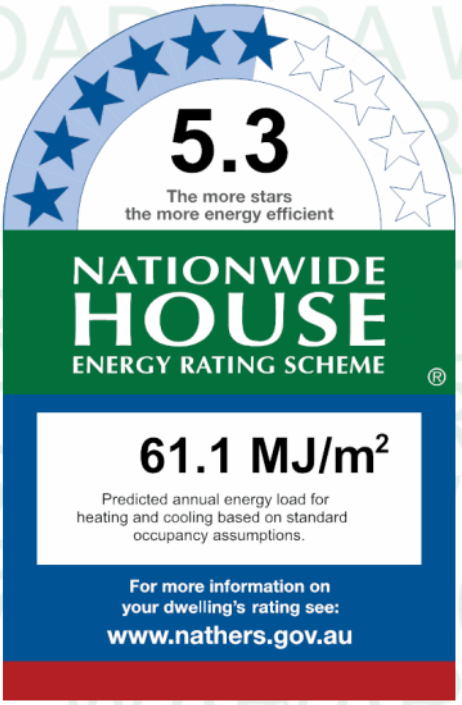
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006164206-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 17, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	167.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
37.0 MJ/m^2	24.1 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	No
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3800	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	1400	YES
Kitchen/Living	EW-1	2700	995	NE	0	YES
Kitchen/Living	EW-1	2700	1000	NW	0	YES
Kitchen/Living	EW-1	2700	2100	NE	100	NO
Kitchen/Living	EW-1	2700	1000	SE	0	YES
Kitchen/Living	EW-1	2700	1300	NE	0	YES
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	1200	NO
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	2095	NW	450	NO
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	5795	NW	450	NO
Bed 1	EW-1	2700	3595	NE	450	NO
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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).

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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.

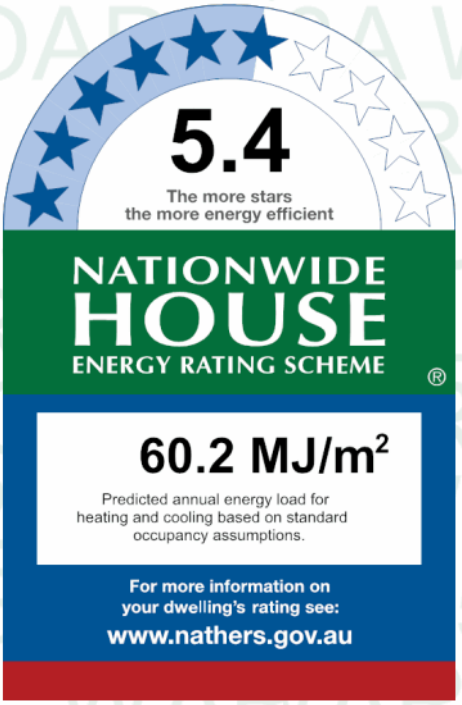
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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. 0006164255-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 18, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	136.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	167.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
36.6 MJ/m^2	23.5 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NW	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	NE	No
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	NE	No
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Bed 1	ALM-004-01 A	n/a	2400	2100	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	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
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SE	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	SW
Kitchen/Living	2400	1000	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	SW	3800	YES
Garage 1	EW-2	2700	5795	SE	0	NO
Kitchen/Living	EW-1	2700	1390	SW	1400	YES
Kitchen/Living	EW-1	2700	995	NW	0	YES
Kitchen/Living	EW-1	2700	1000	SW	0	YES
Kitchen/Living	EW-1	2700	2100	NW	100	NO
Kitchen/Living	EW-1	2700	1000	NE	0	YES
Kitchen/Living	EW-1	2700	1300	NW	0	YES
Kitchen/Living	EW-1	2700	600	NE	0	YES
Kitchen/Living	EW-1	2700	3400	NW	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	NE	300	NO
Kitchen/Living	EW-2	2700	2495	SE	0	NO
WC	EW-1	2700	1100	SW	1200	NO
WC	EW-1	2700	200	NW	4700	YES
WC	EW-1	2700	1695	SE	3400	NO
Media	EW-1	2700	3300	SW	0	NO
Media	EW-1	2700	3095	NW	0	NO
Media	EW-1	2700	200	SE	5900	YES
Stairs GF	EW-1	2700	895	SE	3400	YES
WIR	EW-1	2700	2095	SW	450	NO
WIR	EW-1	2700	4195	SE	450	NO
Bed 1	EW-1	2700	5795	SW	450	NO
Bed 1	EW-1	2700	3595	NW	450	NO
Ensuite	EW-1	2700	2990	NW	450	NO
Bed 2	EW-1	2700	4295	NW	450	NO
Bed 2	EW-1	2700	3995	NE	450	NO
Bed 3	EW-1	2700	3895	NE	450	NO
Bed 3	EW-1	2700	3695	SE	450	NO
Bath	EW-1	2700	2990	SE	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 100mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 100mm	10.00		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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

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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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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006164297-01

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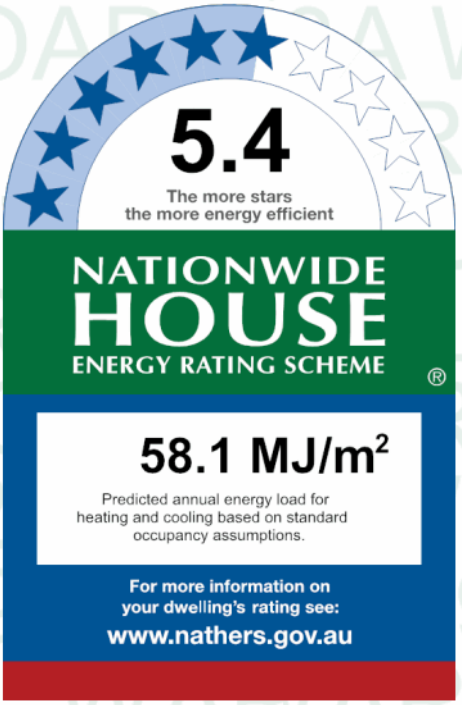

Property

Address	Unit Lot 19, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	139.0	Suburban
Unconditioned*	30.0	**NatHERS climate zone**
Total	170.0	56
Garage	22.0	

Thermal performance

Heating	Cooling
36.8 MJ/m^2	21.3 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	690	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	600	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2720	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3000	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1500	1388	n/a	45	SE	Yes
Kitchen/Living	ALM-003-01 A	n/a	2400	900	n/a	90	SE	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
Media	ALM-004-01 A	n/a	1650	600	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
WIR	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 1	ALM-004-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	Yes
Ensuite	ALM-004-01 A	n/a	1650	800	n/a	45	NE	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 2	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-004-01 A	n/a	1650	1400	n/a	45	SE	No
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-010a	Tubular single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Stairs FF	GEN-04-010a	n/a	450	0.30	SW	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	2400	90	NW
Kitchen/Living	2400	1000	90	NW

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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Cavity Brick	0.50	Medium	No insulation	No
EW-3	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3395	NW	3800	YES
Garage 1	EW-2	2700	5795	SW	0	NO
Kitchen/Living	EW-1	2700	1390	NW	1400	YES
Kitchen/Living	EW-1	2700	995	NE	0	YES
Kitchen/Living	EW-1	2700	1000	NW	0	YES
Kitchen/Living	EW-1	2700	2100	NE	100	NO
Kitchen/Living	EW-1	2700	1000	SE	0	YES
Kitchen/Living	EW-1	2700	1300	NE	0	YES
Kitchen/Living	EW-1	2700	600	SE	0	YES
Kitchen/Living	EW-1	2700	3400	NE	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	8600	SE	300	NO
Kitchen/Living	EW-2	2700	2495	SW	0	NO
WC	EW-1	2700	1100	NW	1200	NO
WC	EW-1	2700	200	NE	4700	YES
WC	EW-1	2700	1695	SW	3400	NO
Media	EW-1	2700	3300	NW	0	NO
Media	EW-1	2700	3095	NE	0	NO
Media	EW-1	2700	200	SW	5900	YES
Stairs GF	EW-1	2700	895	SW	3400	YES
WIR	EW-1	2700	2095	NW	450	YES
WIR	EW-1	2700	4195	SW	450	NO
Bed 1	EW-1	2700	2300	NW	100	NO
Bed 1	EW-1	2700	1300	NE	200	YES
Bed 1	EW-1	2700	3500	NW	450	YES
Bed 1	EW-1	2700	3595	NE	450	NO
Bed 1	EW-1	2700	1300	SW	100	YES
Ensuite	EW-1	2700	2990	NE	450	NO
Bed 2	EW-1	2700	4295	NE	450	NO
Bed 2	EW-1	2700	3995	SE	450	NO
Bed 3	EW-1	2700	3895	SE	450	NO
Bed 3	EW-1	2700	3695	SW	450	NO
Bath	EW-1	2700	2990	SW	450	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	22.40	None	No Insulation	Bare
Kitchen/Living	Concrete Slab on Ground 100mm	52.30	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	1.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Media	Concrete Slab on Ground 100mm	10.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Garage 1	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Carpet 10mm
WIR	Suspended Timber Floor 19mm	5.30	Very Open	No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	5.90		Bulk Insulation R2.5	Carpet 10mm
Bed 1/WC	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Media	Timber Above Plasterboard 19mm	10.00		Bulk Insulation R2.5	Carpet 10mm
Bed 1	Suspended Timber Floor 19mm	3.20	Totally Open	No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	14.20		Bulk Insulation R2.5	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	2.00	Very Open	No Insulation	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 100mm	3.70		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	9.80		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	6.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.80		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.90		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
WC	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Garage 1	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Garage 1	1	Exhaust Fans	300	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Media	2	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed

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
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.

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006164370-01

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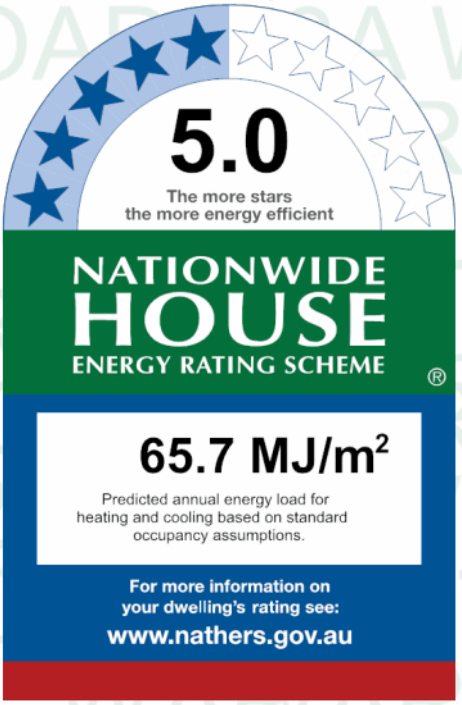

Property

Address	Unit Lot 20, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 26.07.2021
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	151.0	Suburban
Unconditioned*	46.0	**NatHERS climate zone**
Total	197.0	56
Garage	36.0	

Thermal performance

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

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-006-01 A	ALM-006-01 A Aluminium B DG Argon Fill Clear-Clear	4.5	0.61	0.58	0.64
ALM-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53

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*
Bed 2	ALM-006-01 A	n/a	1650	700	n/a	45	NE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 2	ALM-006-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-006-01 A	n/a	1650	700	n/a	45	NW	Yes
Bed 2	ALM-006-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-006-01 A	n/a	2400	2100	n/a	45	SW	No
Bed 1	ALM-006-01 A	n/a	1650	1400	n/a	45	NW	No
Bed 1	ALM-006-01 A	n/a	1650	700	n/a	45	NW	Yes
Ensuite	ALM-006-01 A	n/a	1650	700	n/a	45	SW	Yes
Ensuite	ALM-006-01 A	n/a	1650	700	n/a	45	SW	Yes
WIR	ALM-006-01 A	n/a	1650	1100	n/a	45	SE	No
WIR	ALM-006-01 A	n/a	1650	1100	n/a	45	SW	Yes
Bed 3	ALM-006-01 A	n/a	1650	700	n/a	45	NE	No
Bed 3	ALM-006-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 3	ALM-006-01 A	n/a	1650	1400	n/a	45	SE	No
Laundry	ALM-005-01 A	n/a	2400	820	n/a	90	NW	No
Media	ALM-006-01 A	n/a	1650	1400	n/a	45	SE	No
Media	ALM-006-01 A	n/a	1650	1400	n/a	45	SW	Yes
Hallway/Study	ALM-006-01 A	n/a	1650	1400	n/a	45	NW	No
Powder	ALM-006-01 A	n/a	1650	700	n/a	45	SE	Yes
Kitchen/Living	ALM-006-01 A	n/a	1650	800	n/a	45	SE	No
Kitchen/Living	ALM-006-01 A	n/a	1650	900	n/a	45	SW	No
Kitchen/Living	ALM-006-01 A	n/a	1650	900	n/a	45	SW	No
Kitchen/Living	ALM-006-01 A	n/a	1650	900	n/a	45	SW	No
Kitchen/Living	ALM-006-01 A	n/a	1650	800	n/a	45	NW	No
Kitchen/Living	ALM-006-01 A	n/a	2400	2700	n/a	60	SW	No
Kitchen/Living	ALM-006-01 A	n/a	2400	4000	n/a	45	NW	Yes
Kitchen/Living	ALM-006-01 A	n/a	1500	1388	n/a	45	NW	Yes
Kitchen/Living	ALM-006-01 A	n/a	1500	1388	n/a	45	NW	Yes

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

* Refer to glossary.

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2400	5100	90	SE
Entry	2400	1000	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	No insulation	No
EW-2	Single Skin Brick	0.50	Medium	No insulation	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-4	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-5	Fibro Cavity Panel Direct Fix	0.85	Dark	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	5995	NE	100	NO
Garage 1	EW-2	2700	5895	SE	200	NO
Bed 2	EW-3	2700	4095	NE	600	NO
Bed 2	EW-3	2700	4395	NW	600	NO
Bed 1	EW-3	2700	3495	SW	600	NO
Bed 1	EW-3	2700	4095	NW	600	NO
Ensuite	EW-3	2700	3090	SW	600	NO
WIR	EW-3	2700	4095	SE	600	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
WIR	EW-3	2700	2295	SW	600	NO
Bed 3	EW-3	2700	4795	NE	600	NO
Bed 3	EW-3	2700	4395	SE	600	NO
Laundry	EW-1	2700	2895	NE	100	NO
Laundry	EW-4	2700	1795	NW	275	NO
Media	EW-4	2700	3095	SE	400	NO
Media	EW-5	2700	3295	SW	300	NO
Lift GF	EW-4	2700	695	SE	2900	YES
Lift FF	EW-3	2700	1090	SE	600	NO
Hallway/Study	EW-3	2700	2190	NW	600	NO
Hallway/Study	EW-3	2700	1090	SE	600	NO
Entry	EW-4	2700	1490	SW	1800	YES
Powder	EW-4	2700	2495	NE	900	YES
Powder	EW-4	2700	1395	SE	400	NO
Kitchen/Living	EW-4	2700	900	SE	2500	YES
Kitchen/Living	EW-4	2700	3600	SW	900	NO
Kitchen/Living	EW-4	2700	900	NW	4100	YES
Kitchen/Living	EW-4	2700	3000	SW	1800	YES
Kitchen/Living	EW-4	2700	9295	NW	700	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		44.00	Bulk Insulation, No Air Gap R2
IW-2 - Cavity wall, direct fix plasterboard, single gap		158.00	No insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		3.00	Bulk Insulation, No Air Gap R1

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Concrete Slab on Ground 100mm	36.00	None	No Insulation	Bare
Bed 2/Garage 1	Timber Above Plasterboard 100mm	2.10		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Laundry	Timber Above Plasterboard 100mm	4.00		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	8.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Entry	Timber Above Plasterboard 100mm	0.70		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	17.40		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 100mm	8.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
WIR/Media	Timber Above Plasterboard 100mm	2.40		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
WIR/Entry	Timber Above Plasterboard 100mm	5.30		Bulk Insulation R2.5	Carpet 10mm
WIR/Powder	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Garage 1	Timber Above Plasterboard 19mm	17.60		Bulk Insulation R2.5	Carpet 10mm
Bath/Garage 1	Timber Above Plasterboard 100mm	5.70		Bulk Insulation R2.5	Ceramic Tiles 8mm
Stairs FF/Garage 1	Timber Above Plasterboard 100mm	1.00		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 100mm	2.60		Bulk Insulation R2.5	Carpet 10mm
Laundry	Concrete Slab on Ground 100mm	5.00	None	No Insulation	Ceramic Tiles 8mm
Media	Concrete Slab on Ground 100mm	9.90	None	No Insulation	Cork Tiles or Parquetry 8mm
Lift GF	Concrete Slab on Ground 100mm	1.00	None	No Insulation	Cork Tiles or Parquetry 8mm
Lift FF/Lift GF	Timber Above Plasterboard 100mm	1.10		Bulk Insulation R2.5	Bare
Hallway/Study/Garage 1	Timber Above Plasterboard 100mm	6.10		Bulk Insulation R2.5	Carpet 10mm
Hallway/Study/Entry	Timber Above Plasterboard 100mm	1.20		Bulk Insulation R2.5	Carpet 10mm
Hallway/Study/Kitchen/Living	Timber Above Plasterboard 100mm	5.50		Bulk Insulation R2.5	Carpet 10mm
Entry	Concrete Slab on Ground 100mm	6.90	None	No Insulation	Cork Tiles or Parquetry 8mm
Powder	Concrete Slab on Ground 100mm	4.10	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs GF	Concrete Slab on Ground 100mm	2.50	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	44.70	None	No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Laundry	Plasterboard	Bulk Insulation R2.5	No
Laundry	Timber Above Plasterboard	Bulk Insulation R2.5	No
Media	Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift FF	Plasterboard	Bulk Insulation R4	No
Hallway/Study	Plasterboard	Bulk Insulation R4	No
Entry	Timber Above Plasterboard	Bulk Insulation R2.5	No
Powder	Plasterboard	Bulk Insulation R2.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Powder	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 2	3	Downlights - LED	150	Sealed
Bed 1	5	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
WIR	2	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Laundry	2	Downlights - LED	150	Sealed
Media	2	Downlights - LED	150	Sealed
Hallway/Study	4	Downlights - LED	150	Sealed
Entry	2	Downlights - LED	150	Sealed
Powder	1	Downlights - LED	150	Sealed
Powder	1	Exhaust Fans	300	Sealed
Kitchen/Living	8	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Bed 1	1	1200
Media	1	1200
Kitchen/Living	2	1200

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

* 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).

Nationwide House Energy Rating Scheme
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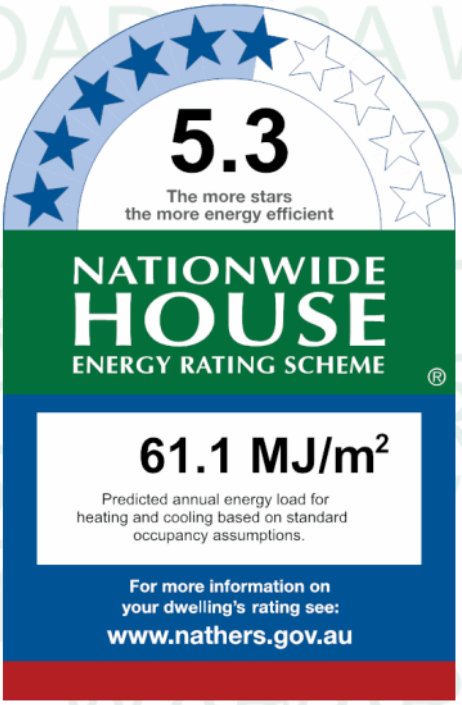
Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



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Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
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Design Matters National	
Declaration of interest	Declaration completed: no conflicts

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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?

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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	ALM-004-01 A	n/a	1650	900	n/a	45	SW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	SW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	900	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2126	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	2400	3129	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	650	1290	n/a	00	NE	No
Kitchen/Living	ALM-004-01 A	n/a	650	1305	n/a	00	NE	No
Bed 1	ALM-004-01 A	n/a	2400	3600	n/a	45	NW	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	900	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	1650	900	n/a	45	NW	No
Bed 2	ALM-004-01 A	n/a	2400	1800	n/a	45	NE	No
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Ensuite	ALM-004-01 A	n/a	1650	700	n/a	45	NE	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bath	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Stairs FF	ALM-004-01 A	n/a	1650	700	n/a	45	SE	No
Stairs FF	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Media	ALM-004-01 A	n/a	1650	900	n/a	45	NW	No
Media	ALM-004-01 A	n/a	1650	900	n/a	45	SW	No
Media	ALM-004-01 A	n/a	1650	900	n/a	45	SW	No
Pantry Lndry	ALM-003-01 A	n/a	2400	800	n/a	90	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	

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
Kitchen/Living	2400	1000	90	SW
Garage 1	2400	2400	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	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-2	Brick Veneer	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-3	Cavity Brick	0.50	Medium	No insulation	No
EW-4	Single Skin Brick	0.50	Medium	No insulation	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	4595	SW	100	YES
Kitchen/Living	EW-1	2700	5000	NW	200	NO
Kitchen/Living	EW-1	2700	4700	NE	100	YES
Kitchen/Living	EW-1	2700	4100	NW	2300	YES
Kitchen/Living	EW-1	2700	4100	NE	100	YES
Kitchen/Living	EW-2	2700	1590	SW	1300	NO
Bed 1	EW-1	2700	4095	NW	2650	YES
Bed 1	EW-1	2700	4095	NE	450	NO
Bed 2	EW-1	2700	5000	NW	450	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 2	EW-1	2700	2200	NE	4550	YES
Bed 2	EW-1	2700	3095	SW	450	NO
Ensuite	EW-1	2700	2895	NE	450	NO
Ensuite	EW-1	2700	3195	SE	450	NO
Bed 3	EW-1	2700	3090	SW	450	YES
Garage 1	EW-1	2700	3395	NE	0	YES
Garage 1	EW-3	2700	6300	SE	0	NO
Garage 1	EW-4	2700	3395	SW	4600	YES
Bath	EW-1	2700	3095	SE	450	NO
Bath	EW-1	2700	2895	SW	450	YES
WIR	EW-1	2700	2490	NE	450	NO
Stairs FF	EW-1	2700	700	NW	6650	YES
Stairs FF	EW-1	2700	3500	SE	450	YES
Stairs FF	EW-1	2700	2600	SW	450	NO
Media	EW-3	2700	2000	NW	300	YES
Media	EW-1	2700	1095	SE	6600	YES
Media	EW-3	2700	3506	SW	276	NO
Pdr	EW-1	2700	595	SW	1375	YES
Pantry Lndry	EW-1	2700	595	NW	100	YES
Pantry Lndry	EW-1	2700	2500	NE	100	NO
Pantry Lndry	EW-1	2700	600	SE	100	YES
Stairs/Store GF	EW-1	2700	3500	SE	3400	YES
Stairs/Store GF	EW-1	2700	995	SW	1225	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		179.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	66.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 100mm	16.40		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 100mm	14.00		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Media	Timber Above Plasterboard 100mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Garage 1	Timber Above Plasterboard 100mm	9.00		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 100mm	7.70		Bulk Insulation R2.5	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 3/Media	Timber Above Plasterboard 100mm	2.40		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Pdr	Timber Above Plasterboard 100mm	1.50		Bulk Insulation R2.5	Carpet 10mm
Garage 1	Concrete Slab on Ground 19mm	22.50	None	No Insulation	Bare
Bath/Garage 1	Timber Above Plasterboard 100mm	9.20		Bulk Insulation R2.5	Ceramic Tiles 8mm
WIR/Kitchen/Living	Timber Above Plasterboard 100mm	2.30		Bulk Insulation R2.5	Carpet 10mm
WIR/Pantry Lndry	Timber Above Plasterboard 100mm	4.80		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Kitchen/Living	Timber Above Plasterboard 100mm	7.10		Bulk Insulation R2.5	Bare
Stairs FF/Stairs/Store GF	Timber Above Plasterboard 100mm	4.50		Bulk Insulation R2.5	Bare
Hallway FF/Kitchen/Living	Timber Above Plasterboard 100mm	5.60		Bulk Insulation R2.5	Carpet 10mm
Hallway FF/Garage 1	Timber Above Plasterboard 100mm	0.80		Bulk Insulation R2.5	Carpet 10mm
Media	Concrete Slab on Ground 100mm	9.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Pdr	Concrete Slab on Ground 100mm	2.10	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry Lndry	Concrete Slab on Ground 100mm	6.20	None	No Insulation	Cork Tiles or Parquetry 8mm
Lift	Concrete Slab on Ground 100mm	1.10	None	No Insulation	Cork Tiles or Parquetry 8mm
Stairs/Store GF	Concrete Slab on Ground 100mm	4.30	None	No Insulation	Ceramic Tiles 8mm
Lift FF/Lift	Timber Above Plasterboard 100mm	1.10		Bulk Insulation R2.5	Bare

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Garage 1	Plasterboard	Bulk Insulation R2.5	No
Garage 1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bath	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Hallway FF	Plasterboard	Bulk Insulation R4	No
Media	Plasterboard	Bulk Insulation R2.5	No
Media	Timber Above Plasterboard	Bulk Insulation R2.5	No
Pdr	Plasterboard	Bulk Insulation R2.5	No
Pdr	Timber Above Plasterboard	Bulk Insulation R2.5	No
Pantry Lndry	Plasterboard	Bulk Insulation R2.5	No
Pantry Lndry	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift	Timber Above Plasterboard	Bulk Insulation R2.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs/Store GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	12	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Garage 1	1	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
WIR	2	Downlights - LED	150	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Hallway FF	2	Downlights - LED	150	Sealed
Media	2	Downlights - LED	150	Sealed
Pantry Lndry	1	Downlights - LED	150	Sealed
Lift	1	Downlights - LED	150	Sealed
Stairs/Store GF	1	Downlights - LED	150	Sealed

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

* 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.

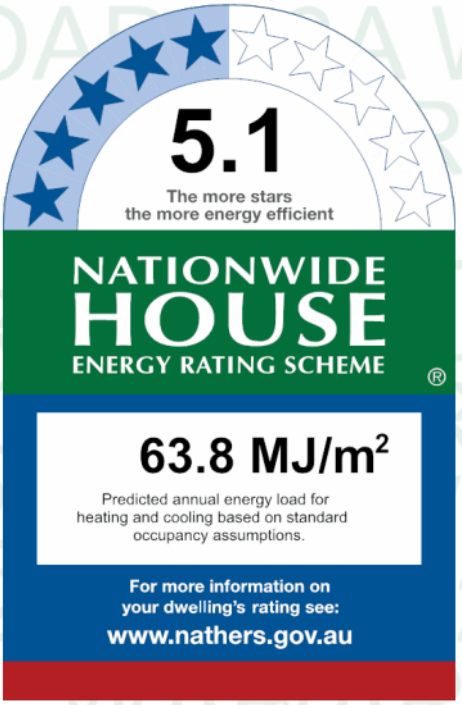
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006151427-02

Generated on 27 Jul 2021 using BERS Pro v4.4.0.4 (3.21)



Property

Address	Unit Lot 22, 53A Warriewood Road , WARRIEWOOD , NSW , 2102
Lot/DP	2/1115877
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	PRE DA, BASIX Review, Revision M dated 10-07-.21
Prepared by	Saturday Studio, Manly

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	123.0	Suburban
Unconditioned*	72.0	**NatHERS climate zone**
Total	195.0	56
Garage	62.0	

Thermal performance

Heating	Cooling
38.0 MJ/m^2	25.7 MJ/m^2

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Accredited assessor

Name	Craig Crowther
Business name	Insight Energy
Email	info@insightenergy.com.au
Phone	07 3106 6777
Accreditation No.	DMN/12/1469
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54

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*
Study	ALM-004-01 A	n/a	2400	900	n/a	90	NW	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Study	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Stairs GF	ALM-004-01 A	n/a	1850	800	n/a	45	NW	Yes
Stairs GF	ALM-004-01 A	n/a	1850	800	n/a	45	NE	Yes
Stairs GF	ALM-004-01 A	n/a	1850	800	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1850	800	n/a	45	NW	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	3434	n/a	60	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	399	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	1400	n/a	45	NE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	NE	Yes
Kitchen/Living	ALM-004-01 A	n/a	1000	1400	n/a	45	SE	No
Kitchen/Living	ALM-004-01 A	n/a	1650	450	n/a	45	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	900	n/a	90	SW	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	2890	n/a	45	NW	No
Kitchen/Living	ALM-004-01 A	n/a	1650	800	n/a	45	SW	Yes
Pdr	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Butlers	ALM-004-01 A	n/a	2400	900	n/a	90	SE	No
Butlers	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 3	ALM-004-01 A	n/a	1400	2100	n/a	45	NW	No
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 3	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 2	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Ensuite	ALM-004-01 A	n/a	1650	700	n/a	45	SW	Yes
Bed 1	ALM-004-01 A	n/a	1400	2100	n/a	45	NE	No
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 1	ALM-004-01 A	n/a	1650	700	n/a	45	SE	Yes
Bed 1	ALM-003-01 A	n/a	2400	1000	n/a	90	SW	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NW	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NE	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	NE	Yes
Bath	ALM-004-01 A	n/a	1400	490	n/a	45	SE	Yes
Stairs FF	ALM-004-01 A	n/a	2700	800	n/a	45	NW	Yes
Stairs FF	ALM-004-01 A	n/a	2700	800	n/a	45	NE	Yes
Stairs FF	ALM-004-01 A	n/a	2700	800	n/a	45	NE	Yes
Void 1	ALM-004-01 A	n/a	2700	800	n/a	45	NW	Yes

* Refer to glossary.

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Laundry	2400	820	90	SE
Garage 1	2400	5100	90	NW
Stairs Basement	2400	820	90	SW
Kitchen/Living	2400	1000	90	NE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	No insulation	No
EW-2	Cavity BrickZ:4W2:1	0.50	Medium	No insulation	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes
EW-4	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Reflective both sides + Bulk Insulation R2.5	Yes

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-5	Cavity BrickZ:7W2:0	0.50	Medium	No insulation	No
EW-6	Cavity BrickZ:7W2:1	0.50	Medium	No insulation	No
EW-7	Cavity BrickZ:7W2:2	0.50	Medium	No insulation	No
EW-8	Cavity BrickZ:8W2:0	0.50	Medium	No insulation	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Laundry	EW-1	2700	3000	SE	0	NO
Laundry	EW-1	2700	1645	SW	0	NO
Garage 1	EW-1	2700	6000	NW	0	YES
Garage 1	EW-1	2700	5100	NE	0	YES
Garage 1	EW-1	2700	145	NE	0	YES
Garage 1	EW-1	2700	6345	SW	0	NO
Stairs Basement	EW-1	2700	3314	NW	0	NO
Stairs Basement	EW-1	800	3600	NE	0	NO
Stairs Basement	EW-2	1900	3600	NE	0	NO
Stairs Basement	EW-1	2700	1495	SE	0	YES
Stairs Basement	EW-1	2700	2795	SW	0	YES
Study	EW-3	2700	1695	NW	2000	NO
Study	EW-3	2700	2095	SW	0	NO
Stairs GF	EW-3	850	2195	NW	0	NO
Stairs GF	EW-5	1850	2195	NW	0	NO
Stairs GF	EW-3	850	3600	NE	0	NO
Stairs GF	EW-6	1850	3600	NE	0	NO
Stairs GF	EW-4	850	1200	SE	0	YES
Stairs GF	EW-7	1850	1200	SE	1500	YES
Kitchen/Living	EW-3	850	1095	NW	0	NO
Kitchen/Living	EW-8	1850	1095	NW	0	NO
Kitchen/Living	EW-3	2700	1495	NE	1200	YES
Kitchen/Living	EW-3	2700	1000	SE	3800	YES
Kitchen/Living	EW-3	2700	4900	NE	1500	YES
Kitchen/Living	EW-3	2700	500	NW	75	YES
Kitchen/Living	EW-3	2700	2200	NE	500	NO
Kitchen/Living	EW-3	2700	500	SE	500	YES
Kitchen/Living	EW-3	2700	500	NE	1000	YES
Kitchen/Living	EW-3	2700	900	SE	0	YES
Kitchen/Living	EW-3	2700	600	NE	0	YES
Kitchen/Living	EW-3	2700	2200	SE	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-3	2700	600	SW	0	YES
Kitchen/Living	EW-3	2700	1000	SE	0	YES
Kitchen/Living	EW-3	2700	3800	SW	0	YES
Kitchen/Living	EW-3	2700	2995	NW	2000	YES
Kitchen/Living	EW-3	2700	2000	SW	4700	YES
Pdr	EW-3	2700	1790	SW	0	NO
Butlers	EW-3	2700	1695	SE	1700	YES
Butlers	EW-3	2700	2995	SW	0	NO
Bed 3	EW-3	2700	3900	NW	450	NO
Bed 3	EW-3	2700	200	NE	4550	YES
Bed 3	EW-3	2700	795	NW	650	YES
Bed 3	EW-3	2700	3395	SW	450	NO
Bed 2	EW-3	2700	3290	SW	450	NO
Ensuite	EW-3	2700	1700	SE	1250	YES
Ensuite	EW-3	2700	2895	SW	450	NO
Bed 1	EW-3	2700	3800	NE	450	YES
Bed 1	EW-3	2700	4100	SE	450	NO
Bed 1	EW-3	2700	3095	SW	450	YES
Bath	EW-3	2700	500	NW	5550	YES
Bath	EW-3	2700	1000	NE	200	YES
Bath	EW-3	2700	600	NW	2050	YES
Bath	EW-3	2700	1800	NE	0	NO
Bath	EW-3	2700	500	SE	0	YES
Bath	EW-3	2700	1000	NE	100	YES
Bath	EW-3	2700	1595	SE	450	YES
Stairs FF	EW-3	2700	2195	NW	450	NO
Stairs FF	EW-3	2700	3600	NE	450	NO
Stairs FF	EW-3	2700	1200	SE	450	YES
Void 2	EW-3	2700	1490	NE	450	YES
Void 1	EW-3	2700	1095	NW	450	NO
Void 1	EW-3	2700	200	SW	5150	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity Brick		8.00	No insulation
IW-2 - Cavity brick		18.00	No Insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		179.00	No insulation

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	Concrete Slab on Ground 100mm	4.90	None	No Insulation	Bare
Garage 1	Concrete Slab on Ground 100mm	48.60	None	No Insulation	Bare
Lift Basement	Concrete Slab on Ground 100mm	1.30	None	No Insulation	Bare
Stairs Basement	Concrete Slab on Ground 100mm	8.60	None	No Insulation	Bare
Study/Garage 1	Concrete Above Plasterboard 150mm	2.60		Bulk Insulation R2	Carpet 10mm
Study	Suspended Concrete Slab 150mm	0.80	Very Open	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Lift GF/Lift Basement	Concrete Above Plasterboard 19mm	1.30		Bulk Insulation R2	Carpet 10mm
Stairs GF/Garage 1	Concrete Above Plasterboard 19mm	0.70		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Stairs GF/Stairs Basement	Concrete Above Plasterboard 19mm	5.30		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Kitchen/Living /Garage 1	Concrete Above Plasterboard 150mm	26.20		Bulk Insulation R2	Carpet 10mm
Kitchen/Living /Stairs Basement	Concrete Above Plasterboard 150mm	2.70		Bulk Insulation R2	Carpet 10mm
Kitchen/Living	Suspended Concrete Slab 150mm	20.60	Enclosed	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Pdr/Garage 1	Concrete Above Plasterboard 19mm	2.80		Bulk Insulation R2	Carpet 10mm
Butlers/Garage 1	Concrete Above Plasterboard 19mm	4.90		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Bed 3/Study	Timber Above Plasterboard 19mm	2.30		Bulk Insulation R2.5	Carpet 10mm
Bed 3/Kitchen/Living	Timber Above Plasterboard 19mm	4.10		Bulk Insulation R2.5	Carpet 10mm
Bed 3	Suspended Timber Floor 19mm	9.00	Very Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bed 2/Study	Timber Above Plasterboard 19mm	1.10		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	8.70		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Pdr	Timber Above Plasterboard 19mm	2.90		Bulk Insulation R2.5	Carpet 10mm
Bed 2/Butlers	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	3.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Ensuite/Butlers	Timber Above Plasterboard 19mm	3.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Ensuite	Suspended Timber Floor 19mm	1.10	Very Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Robe/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		Bulk Insulation R2.5	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	15.10		Bulk Insulation R2.5	Carpet 10mm
Bath	Suspended Timber Floor 19mm	6.20	Very Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Lift FF/Lift GF	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Carpet 10mm
Stairs FF/Stairs GF	Timber Above Plasterboard 19mm	6.10		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Void 2/Kitchen/Living	Timber Above Plasterboard 19mm	1.30		Bulk Insulation R2.5	Bare
Void 1/Kitchen/Living	Timber Above Plasterboard 19mm	1.10		Bulk Insulation R2.5	Bare
Corridor FF/Kitchen/Living	Timber Above Plasterboard 19mm	6.80		Bulk Insulation R2.5	Carpet 10mm
Corridor FF	Suspended Timber Floor 19mm	0.50	Very Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Laundry	Concrete	No insulation	No
Garage 1	Concrete, Plasterboard	Bulk Insulation R2	No
Garage 1	Concrete Above Plasterboard	Bulk Insulation R2	No
Lift Basement	Concrete Above Plasterboard	Bulk Insulation R2	No
Stairs Basement	Concrete Above Plasterboard	Bulk Insulation R2	No
Study	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lift GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Stairs GF	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
Pdr	Timber Above Plasterboard	Bulk Insulation R2.5	No
Butlers	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bed 3	Plasterboard	Bulk Insulation R4	No
Bed 2	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Robe	Plasterboard	Bulk Insulation R4	No
Bed 1	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Lift FF	Plasterboard	Bulk Insulation R4	No
Stairs FF	Plasterboard	Bulk Insulation R4	No
Void 2	Plasterboard	Bulk Insulation R4	No
Void 1	Plasterboard	Bulk Insulation R4	No
Corridor FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Laundry	1	Downlights - LED	150	Sealed
Study	1	Downlights - LED	150	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Pdr	1	Downlights - LED	150	Sealed
Butlers	1	Downlights - LED	150	Sealed
Bed 3	3	Downlights - LED	150	Sealed
Bed 2	3	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Robe	1	Downlights - LED	150	Sealed
Bed 1	5	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs FF	1	Downlights - LED	150	Sealed
Corridor FF	2	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Concrete	No Added Insulation, No 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).