Nationwide House Energy Rating Scheme — Class 2 summary
NatHERS Certificate No. 0004971680

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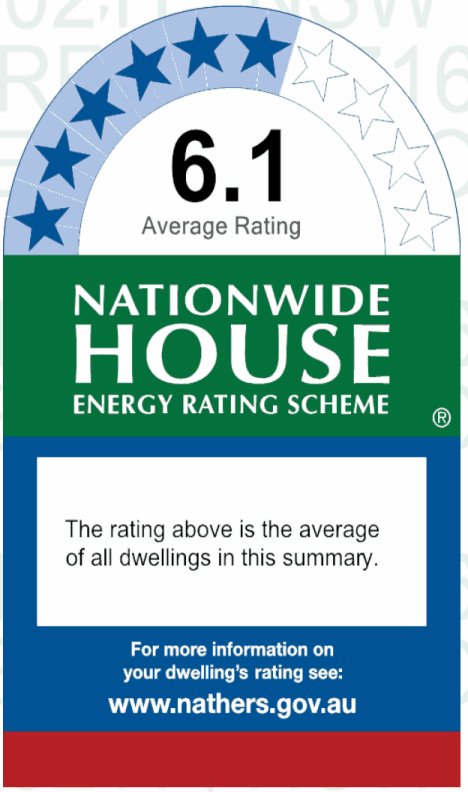

Property

Address 62 Old Barrenjoey Road , Avalon Beach , NSW , 2107

Lot/DP C/399767

NatHERS climate zone 56

Accredited assessor

Zoran Cvetkovski

Sustainability-Z

sustainability-z@outlook.com

0414273176

Accreditation No. DMN/13/1641

Assessor Accrediting Organisation Design Matters National

Verification

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

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0006643514	1	16.9	24.3	41.2	6.8
0006643522	2	37.8	21.4	59.2	5.4
Average		27.35	22.85	50.2	6.1

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated buildings 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.

Explanatory Notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the 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. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

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). 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.

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, input and creation of the NatHERS Certificate is by the assessor. 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006643514

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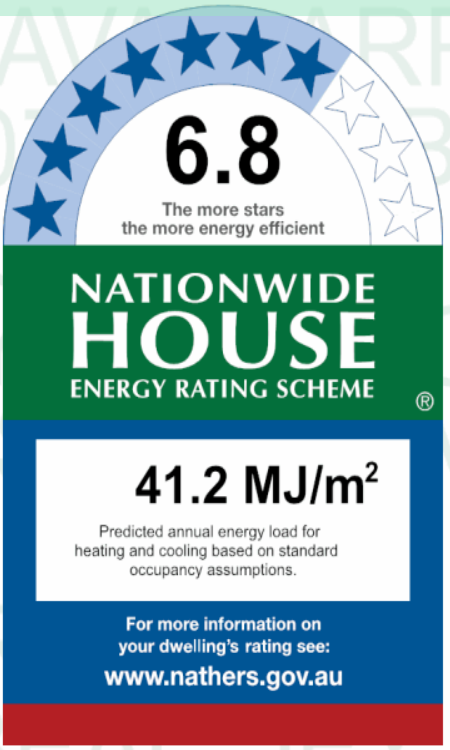

Property

Address	Unit 1, 62 Old Barrenjoey Road , Avalon Beach , NSW , 2107
Lot/DP	C/399767
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	n/a
Prepared by	n/a

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	78.0	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	78.0	56
Garage	0.0	

Thermal performance

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

Accredited assessor

Name	Zoran Cvetkovski
Business name	Sustainability-Z
Email	sustainability-z@outlook.com
Phone	0414273176
Accreditation No.	DMN/13/1641
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration not completed

About the rating

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

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* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Rated with provisional values for downlights
Rated with AWS windows.

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-004-02 A	ALM-004-02 A Aluminium B DG Air Fill Tint-Clear	5.2	0.39	0.37	0.41

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-016-01 A	AWS-016-01 A 548 BF Al BiFold Door SG 5Clr	6.1	0.57	0.54	0.60
AWS-007-01 A	AWS-007-01 A 516 Al Awining Window SG 3Clr	6.5	0.66	0.63	0.69

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Ktch/Liv/Din	AWS-016-01 A	n/a	1680	3500	n/a	90	NW	No
Void/St-L2	AWS-016-01 A	n/a	745	3500	n/a	90	NW	No
Bed 1-L2	ALM-004-01 A	n/a	2410	1915	n/a	00	NE	No
Bed 1-L2	AWS-007-01 A	n/a	500	1949	n/a	00	NE	No Shading
Ldry/Ens-L2	ALM-004-02 A	n/a	2410	1569	n/a	00	SE	No
Ldry/Ens-L2	AWS-007-01 A	n/a	10	10	n/a	00	SW	No Shading
Ldry/Ens-L2	AWS-007-01 A	n/a	500	1000	n/a	00	NW	No Shading

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
VEL-011-01 W	Glass	2.6	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Void/St-L2	VEL-011-01 W	n/a	0	1200	1200	NE	No	No
Void/St-L2	VEL-011-01 W	n/a	0	1200	1200	NE	No	No

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R2	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Ktch/Liv/Din	EW-1	1680	4300	NW	3800	NO
Ktch/Liv/Din	EW-2	1680	10495	SW	100	NO
Store-L1	EW-2	2100	2395	SW	100	NO
Void/St-L2	EW-2	1660	10495	SW	100	NO
Void/St-L2	EW-1	1660	4300	NW	100	NO
Bed 1-L2	EW-1	2410	2995	NE	100	YES
Bed 1-L2	EW-2	2410	5695	SW	100	NO
Ldry/Ens-L2	EW-2	2410	3600	NE	100	NO
Ldry/Ens-L2	EW-1	2410	1695	SE	100	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		69.00	Bulk Insulation both sides of air gap R2
IW-2 - Cavity wall, direct fix plasterboard, single gap		32.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ktch/Liv/Din	Concrete Slab, Unit Below 150mm	46.50	None	No Insulation	60/40 Carpet 10mm/Ceramic
Store-L1	Concrete Slab, Unit Below 150mm	2.20	None	No Insulation	Carpet+Rubber Underlay 18mm
WC-L1	Concrete Slab, Unit Below 150mm	2.90	None	No Insulation	Ceramic Tiles 8mm
Void/St-L2/Ktch/Liv/Din	Concrete Above Plasterboard 150mm	46.70		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2/Store-L1	Concrete Above Plasterboard 150mm	2.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2/WC-L1	Concrete Above Plasterboard 150mm	3.30		No Insulation	Carpet+Rubber Underlay 18mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1-L2/Glazed Common A	Concrete Above Plasterboard 150mm	12.00		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2	Suspended Concrete Slab 150mm	1.60	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Ldry/Ens-L2/Glazed Common A	Concrete Above Plasterboard 150mm	6.30		No Insulation	Carpet+Rubber Underlay 18mm
Ldry/Ens-L2	Suspended Concrete Slab 150mm	0.80	Totally Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Ktch/Liv/Din	Concrete, Plasterboard	Bulk Insulation R3.5	No
Ktch/Liv/Din	Concrete Above Plasterboard	No Insulation	No
Store-L1	Concrete, Plasterboard	Bulk Insulation R3.5	No
Store-L1	Concrete Above Plasterboard	No Insulation	No
WC-L1	Concrete, Plasterboard	Bulk Insulation R3.5	No
WC-L1	Concrete Above Plasterboard	No Insulation	No
Void/St-L2	Concrete, Plasterboard	Bulk Insulation R3.5	No
Bed 1-L2	Concrete, Plasterboard	Bulk Insulation R3.5	No
Ldry/Ens-L2	Concrete, Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Ktch/Liv/Din	12	Downlights - LED	50	Sealed
Ktch/Liv/Din	1	Exhaust Fans	300	Sealed
Store-L1	1	Downlights - LED	50	Sealed
WC-L1	1	Downlights - LED	50	Sealed
WC-L1	1	Exhaust Fans	300	Sealed
Void/St-L2	12	Downlights - LED	50	Sealed
Bed 1-L2	5	Downlights - LED	50	Sealed
Ldry/Ens-L2	2	Downlights - LED	50	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

Glossary

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

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006643522

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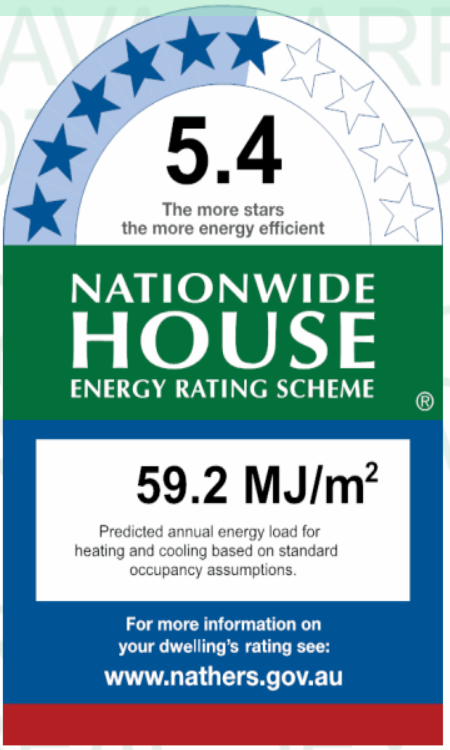

Property

Address	Unit 2, 62 Old Barrenjoey Road , Avalon Beach , NSW , 2107
Lot/DP	C/399767
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	n/a
Prepared by	n/a

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	120.0	Suburban
Unconditioned*	5.0	**NatHERS climate zone**
Total	126.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
37.8 MJ/m^2	21.4 MJ/m^2

Accredited assessor

Name	Zoran Cvetkovski
Business name	Sustainability-Z
Email	sustainability-z@outlook.com
Phone	0414273176
Accreditation No.	DMN/13/1641
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration not completed

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Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Rated with provisional values for downlights
Rated with AWS windows.

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-004-02 A	ALM-004-02 A Aluminium B DG Air Fill Tint-Clear	5.2	0.39	0.37	0.41

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-007-01 A	AWS-007-01 A 516 Al Awining Window SG 3Clr	6.5	0.66	0.63	0.69
AWS-066-08 A	AWS-066-08 A RES SERIES 516 FIXED WINDOW SG 5mmEnTech	4.0	0.64	0.61	0.67
AWS-020-05 A	AWS-020-05 A 548 HD Al French Door SG 638Sct	4.6	0.48	0.46	0.50

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Study-L1	AWS-007-01 A	n/a	1380	1500	n/a	90	NW	No
Ktch/Liv/Din-2	AWS-066-08 A	n/a	3000	3300	n/a	00	SE	No
Ktch/Liv/Din-2	AWS-066-08 A	n/a	3000	900	n/a	00	NE	No
Ktch/Liv/Din-2	AWS-066-08 A	n/a	3000	1200	n/a	00	NE	No
Ktch/Liv/Din-2	AWS-020-05 A	n/a	3000	820	n/a	90	NE	No
Ktch/Liv/Din-2	AWS-066-08 A	n/a	3000	2000	n/a	00	SE	No
Bed 1-L2--	AWS-007-01 A	n/a	1380	1500	n/a	90	NE	No
Ens/Bed 1--	ALM-004-02 A	n/a	2410	1569	n/a	00	NW	No
Bed 2--	AWS-007-01 A	n/a	1500	2000	n/a	90	SE	No
Bed 2--	AWS-007-01 A	n/a	1500	800	n/a	90	SE	No
Media/St--	AWS-007-01 A	n/a	1500	2000	n/a	90	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
VEL-011-01 W	Glass	2.6	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ktch/Liv/Din-2	VEL-011-01 W	n/a	0	1200	1200	NE	No	No
Media/St--	VEL-011-01 W	n/a	0	1000	3250	NE	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

* Refer to glossary.

External door *schedule*

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

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R2	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Ldry/WC-L1	EW-1	2400	2295	SW	100	NO
Study-L1	EW-1	2400	4195	NE	100	NO
Study-L1	EW-1	2400	2195	NW	700	YES
Ktch/Liv/Din-2	EW-1	2400	995	NE	2300	YES
Ktch/Liv/Din-2	EW-1	2400	3095	NE	100	NO
Ktch/Liv/Din-2	EW-1	3000	4600	NE	100	NO
Ktch/Liv/Din-2	EW-1	3000	3300	SE	5300	YES
Ktch/Liv/Din-2	EW-1	3000	949	NE	3739	YES
Ktch/Liv/Din-2	EW-1	3000	2300	NE	3700	YES
Ktch/Liv/Din-2	EW-1	3000	2100	SE	2100	NO
Ktch/Liv/Din-2	EW-2	3000	7800	SW	100	NO
Ktch/Liv/Din-2	EW-1	2400	6895	SW	100	NO
Bed 1-L2--	EW-2	2410	1600	NE	100	YES
Bed 1-L2--	EW-2	2410	3595	SW	100	NO
Ens/Bed 1--	EW-2	2410	1695	NW	100	YES
Ens/Bed 1--	EW-2	2410	2295	NE	100	NO
BT--	EW-2	2410	1390	NE	100	NO
Bed 2--	EW-2	2410	4195	NE	100	NO
Bed 2--	EW-2	2410	2995	SE	100	NO
Media/St--	EW-2	2410	2695	SE	100	NO
Media/St--	EW-2	2410	5895	SW	100	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		66.00	No insulation

* Refer to glossary.

Wall ID	Wall type	Area (m)	Bulk insulation
IW-2 - Concrete Panel/Blocks filled, plaster on studs		10.00	Bulk Insulation both sides of air gap R2

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ldry/WC-L1	Suspended Concrete Slab 150mm	5.10	Totally Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Study-L1	Suspended Concrete Slab 150mm	10.20	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Ktch/Liv/Din-2	Suspended Concrete Slab 150mm	64.00	Totally Open	Bulk Insulation in Contact with Floor R2	60/40 Carpet 10mm/Ceramic
Bed 1-L2--/Glazed Common A	Concrete Above Plasterboard 150mm	1.70		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2--/Ldry/WC-L1	Concrete Above Plasterboard 150mm	5.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2--/Study-L1	Concrete Above Plasterboard 150mm	0.90		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2--/Ktch/Liv/Din-2	Concrete Above Plasterboard 150mm	5.00		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1-L2--	Suspended Concrete Slab 150mm	1.10	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Ens/Bed 1--/Study-L1	Concrete Above Plasterboard 150mm	2.80		No Insulation	Ceramic Tiles 8mm
Ens/Bed 1--	Suspended Concrete Slab 150mm	1.00	Totally Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
BT--/Study-L1	Concrete Above Plasterboard 150mm	3.60		No Insulation	Ceramic Tiles 8mm
BT--/Ktch/Liv/Din-2	Concrete Above Plasterboard 150mm	0.60		No Insulation	Ceramic Tiles 8mm
Bed 2--/Study-L1	Concrete Above Plasterboard 150mm	2.80		No Insulation	Carpet+Rubber Underlay 18mm
Bed 2--/Ktch/Liv/Din-2	Concrete Above Plasterboard 150mm	9.50		No Insulation	Carpet+Rubber Underlay 18mm
Media/St--/Ktch/Liv/Din-2	Concrete Above Plasterboard 150mm	15.50		No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Ldry/WC-L1	Concrete, Plasterboard	Bulk Insulation R3.5	No
Ldry/WC-L1	Concrete Above Plasterboard	No Insulation	No
Study-L1	Concrete, Plasterboard	Bulk Insulation R3.5	No
Study-L1	Concrete Above Plasterboard	No Insulation	No
Ktch/Liv/Din-2	Concrete, Plasterboard	Bulk Insulation R3.5	No
Ktch/Liv/Din-2	Concrete Above Plasterboard	No Insulation	No
Bed 1-L2--	Concrete, Plasterboard	Bulk Insulation R3.5	No
Ens/Bed 1--	Concrete, Plasterboard	Bulk Insulation R3.5	No
BT--	Concrete, Plasterboard	Bulk Insulation R3.5	No
Bed 2--	Concrete, Plasterboard	Bulk Insulation R3.5	No
Media/St--	Concrete, Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Ldry/WC-L1	1	Downlights - LED	50	Sealed
Ldry/WC-L1	1	Exhaust Fans	300	Sealed
Study-L1	2	Downlights - LED	50	Sealed
Ktch/Liv/Din-2	16	Downlights - LED	50	Sealed
Ktch/Liv/Din-2	1	Exhaust Fans	300	Sealed
Bed 1-L2--	3	Downlights - LED	50	Sealed
Ens/Bed 1--	1	Downlights - LED	50	Sealed
BT--	1	Downlights - LED	50	Sealed
BT--	1	Exhaust Fans	300	Sealed
Bed 2--	3	Downlights - LED	50	Sealed
Media/St--	4	Downlights - LED	50	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

* 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).