

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. 0006116768-06

Generated on 16 Dec 2021 using BERS Pro v4.4.0.6 (3.21)

### Property

**Address** 92 Riverview Road , Avalon , NSW , 2107  
**Lot/DP** 70/24563  
**NCC Class\*** 1A  
**Type** New Dwelling

### Plans

**Main Plan** 2019 92 Riverview Road  
**Prepared by** Phil Brown Drafting

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>	<b>Exposure Type</b>
Conditioned* 267.0	Open
Unconditioned* 16.0	<b>NatHERS climate zone</b>
Total 283.0	56
Garage 0.0	



### Accredited assessor

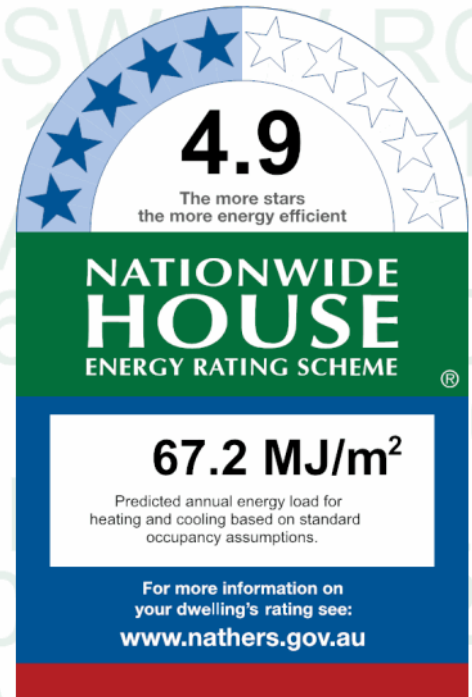
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**Accreditation No.** DMN/12/1441  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### 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](http://www.abcb.gov.au).

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



### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>43.7</b>	<b>23.5</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit [hstar.com.au/QR/Generate?p=KQeARough](http://hstar.com.au/QR/Generate?p=KQeARough). When using either link, ensure you are visiting [hstar.com.au](http://hstar.com.au)



## 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

Where not noted on plans, default selections to floor coverings and external colours have been used in this assessment, as noted in the NatHERS Technical Notes. Alternative selections past this point can be made to floor coverings and external colours, without requiring an amended certificate.

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
STG-003-09 A	STG-003-09 A Aluminium Double Hung Window SG 4ET	4.5	0.62	0.59	0.65
STG-019-08 W	STG-019-08 W Cedar Double Hung Window SG 4Sn	3.5	0.44	0.42	0.46
STG-037-03 W	STG-037-03 W Cedar Hinged Door SG 4EA	2.9	0.48	0.46	0.50

## Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
STG-021-10 W	STG-021-10 W Cedar Sliding Door SG 4ET	3.1	0.48	0.46	0.50
STG-021-07 W	STG-021-07 W Cedar Sliding Door SG 4Sn	3.4	0.41	0.39	0.43
STG-073-24 W	STG-073-24 W Alumiere Fixed Window SG 6SUN	4.7	0.54	0.51	0.57
STG-017-01 W	STG-017-01 W Cedar Awning Window SG 3Clr	4.8	0.60	0.57	0.63
STG-019-01 W	STG-019-01 W Cedar Double Hung Window SG 3Clr	4.8	0.63	0.60	0.66

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Powder	ALM-002-01 A	n/a	600	800	n/a	90	NE	No
Bed 5	STG-003-09 A	n/a	1200	2400	n/a	45	NE	No
Bath	ALM-002-01 A	n/a	1800	1000	n/a	90	SE	No
Ensuite Bed 4	ALM-002-01 A	n/a	1800	1000	n/a	90	SE	No
Bed 4	STG-003-09 A	n/a	600	2400	n/a	45	SE	No
Bed 4	STG-019-08 W	n/a	1200	2400	n/a	33	SW	No
Guest	STG-019-08 W	n/a	1200	1397	n/a	33	SW	No
Foyer/Hall	STG-037-03 W	n/a	2100	1000	n/a	68	SW	No
Kitchen/Lounge	STG-021-10 W	n/a	2100	5000	n/a	23	NW	No
Kitchen/Lounge	STG-003-09 A	n/a	1200	1200	n/a	45	NE	No
Kitchen/Lounge	STG-037-03 W	n/a	760	2500	n/a	00	SW	No
Kitchen/Lounge	STG-037-03 W	n/a	2100	5000	n/a	90	SW	No
Kitchen/Lounge	STG-037-03 W	n/a	760	2500	n/a	00	SW	No
Kitchen/Lounge	STG-019-08 W	n/a	2100	1600	n/a	33	SW	No
Bed 3	STG-021-07 W	n/a	2100	3000	n/a	30	NW	No
Bed 3	STG-003-09 A	n/a	1200	1800	n/a	45	NE	No
Media	STG-003-09 A	n/a	1200	1800	n/a	45	NE	No
Study	STG-003-09 A	n/a	1200	1200	n/a	45	NE	No
Bath Upper	ALM-002-01 A	n/a	1700	1000	n/a	90	SE	No
Ensuite Bed 2	ALM-002-01 A	n/a	1700	1000	n/a	90	SE	No
Bed 2	STG-003-09 A	n/a	600	2400	n/a	45	SE	No
Bed 2	STG-037-03 W	n/a	2100	3300	n/a	45	SW	No
Rumpus/Family	STG-073-24 W	n/a	600	3100	n/a	00	NE	No
Rumpus/Family	STG-037-03 W	n/a	2100	4800	n/a	90	SW	No
Rumpus/Family	STG-021-10 W	n/a	2100	3200	n/a	45	NW	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Lift	STG-017-01 W	n/a	1800	1200	n/a	00	SW	No
Lift	STG-017-01 W	n/a	1800	1200	n/a	00	SW	No
Parents Retreat	STG-019-08 W	n/a	1400	3600	n/a	33	NW	No
Parents Retreat	STG-019-08 W	n/a	1400	2400	n/a	33	SW	No
Stair	STG-019-08 W	n/a	800	1800	n/a	45	SW	No
WIR Retreat	ALM-002-01 A	n/a	1800	1000	n/a	90	SE	No
WIR Retreat	STG-019-01 W	n/a	1100	2400	n/a	33	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-04-008a	Double-glazed clear, Timber and Aluminium Frame

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	NW	None	No	0.50
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	NW	None	No	0.50
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	NW	None	No	0.50
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	SE	None	No	0.50
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	SE	None	No	0.50
Kitchen/Lounge	GEN-04-008a	n/a	1190	1.60	SE	None	No	0.50
Bath Upper	GEN-04-008a	n/a	1190	0.80	E	None	No	0.50

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Ensuite Bed 2	GEN-04-008a	n/a	1190	0.80	E	None	No	0.50
Bed 2	GEN-04-008a	n/a	1190	0.60	E	None	No	0.50
WIR Retreat	GEN-04-008a	n/a	1190	1.60	SE	None	No	0.50

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Powder	2100	820	90	SW

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Weatherboard Cavity Panel Direct Fix	0.30	Light	Reflective foil with bulk no gap R2.7	Yes
EW-2	Weatherboard Cavity Panel Direct Fix	0.30	Light	Reflective foil with bulk no gap R2.7	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Powder	EW-1	2400	995	SW	4100	YES
Powder	EW-1	2400	1500	NW	2100	NO
Powder	EW-1	2400	995	NE	2500	NO
Store/Study	EW-1	2400	1890	NE	2500	NO
Stairwell	EW-1	2400	2090	NE	2500	NO
Bed 5	EW-1	2400	3090	NE	2500	NO
Bath	EW-1	2400	595	NE	600	NO
Bath	EW-1	2400	4712	SE	56	NO
Ensuite Bed 4	EW-1	2400	2460	SE	90	NO
Bed 4	EW-1	2400	938	SE	90	NO
Bed 4	EW-1	2400	2700	SE	100	NO
Bed 4	EW-1	2400	3395	SW	1200	NO
Guest	EW-1	2400	1390	SW	1200	YES
Foyer/Hall	EW-1	2400	1395	SW	500	NO
Foyer/Hall	EW-1	2400	3000	NW	6700	YES
Kitchen/Lounge	EW-1	2400	6495	NW	527	NO
Kitchen/Lounge	EW-1	2400	2195	NE	600	NO
Kitchen/Lounge	EW-1	2400	3408	SE	596	NO
Kitchen/Lounge	EW-1	3010	7200	SW	4400	YES
Bed 3	EW-1	2400	4095	NW	600	NO
Bed 3	EW-1	2400	2995	NE	600	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Media	EW-1	2400	3890	NE	600	NO
Study	EW-1	2400	2090	NE	600	NO
Bath Upper	EW-1	2400	4124	SE	617	NO
Ensuite Bed 2	EW-1	2400	2460	SE	652	NO
Bed 2	EW-1	2400	2700	SE	600	NO
Bed 2	EW-1	2400	4795	SW	1700	YES
Bed 2	EW-1	2400	938	SE	673	NO
Rumpus/Family	EW-2	2400	1895	NW	2350	YES
Rumpus/Family	EW-2	2400	3990	NE	2500	NO
Rumpus/Family	EW-2	2400	5795	SW	3500	YES
Rumpus/Family	EW-2	2400	4528	NW	1535	NO
Lift	EW-2	2400	700	SE	4900	YES
Lift	EW-2	2400	1695	SW	500	NO
Lift	EW-1	2400	1700	SW	1400	NO
Lift	EW-1	2400	1595	NW	7300	NO
Lift	EW-1	2400	700	SE	5400	YES
Hall	EW-1	2400	1390	NW	7350	YES
Parents Retreat	EW-2	2400	5100	NW	500	NO
Parents Retreat	EW-2	3500	3895	NE	600	NO
Parents Retreat	EW-2	2400	2895	SW	600	NO
Stair	EW-2	2400	3090	SW	600	NO
WIR Retreat	EW-2	3500	3495	NE	600	NO
WIR Retreat	EW-2	2400	627	SE	577	YES
WIR Retreat	EW-2	3500	4045	SE	530	NO
WIR Retreat	EW-2	2400	700	SE	500	NO
WIR Retreat	EW-2	2400	2995	SW	600	NO

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		39.00	Bulk Insulation, No Air Gap R2
IW-2 - Cavity wall, direct fix plasterboard, single gap		245.00	No insulation

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation (R-value)	Added insulation	Covering
Powder	Suspended Timber Floor 19mm	1.40	Enclosed	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm
Store/Study	Suspended Timber Floor 19mm	2.60	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm



Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairwell	Suspended Timber Floor 19mm	4.90	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Bed 5	Suspended Timber Floor 19mm	11.40	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Bath	Suspended Timber Floor 19mm	6.00	Enclosed	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm
Ensuite Bed 4	Suspended Timber Floor 19mm	3.60	Enclosed	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm
Bed 4	Suspended Timber Floor 19mm	13.30	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Guest	Suspended Timber Floor 19mm	9.60	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Foyer/Hall	Suspended Timber Floor 19mm	14.10	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Laundry Chute	Suspended Timber Floor 19mm	0.90	Enclosed	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm
Kitchen/Lounge/Stairwell	Timber Above Plasterboard 19mm	5.20		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Lounge/Bed 5	Timber Above Plasterboard 19mm	11.70		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Lounge/Guest	Timber Above Plasterboard 19mm	1.50		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Lounge/Foyer/Hall	Timber Above Plasterboard 19mm	7.00		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Lounge/Rumpus/Family	Timber Above Plasterboard 19mm	35.50		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Lounge	Suspended Timber Floor 19mm	7.90	Totally Open	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Bed 3/Powder	Timber Above Plasterboard 19mm	1.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3/Store/Study	Timber Above Plasterboard 19mm	2.80		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3/Rumpus/Family	Timber Above Plasterboard 19mm	0.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3	Suspended Timber Floor 19mm	7.20	Totally Open	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Media/Rumpus/Family	Timber Above Plasterboard 19mm	4.10		No Insulation	Carpet+Rubber Underlay 18mm
Media	Suspended Timber Floor 19mm	9.00	Totally Open	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Study	Suspended Timber Floor 19mm	4.70	Totally Open	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Bath Upper/Bath	Timber Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm
Ensuite Bed 2/Ensuite Bed 4	Timber Above Plasterboard 19mm	3.70		No Insulation	Ceramic Tiles 8mm
Bed 2/Bed 4	Timber Above Plasterboard 19mm	13.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 2/Guest	Timber Above Plasterboard 19mm	4.20		No Insulation	Carpet+Rubber Underlay 18mm
LDY Chute Upper/Laundry Chute	Timber Above Plasterboard 19mm	0.90		No Insulation	Ceramic Tiles 8mm
Buttlers Pantry/Rumpus/Family	Timber Above Plasterboard 19mm	3.50		No Insulation	Carpet+Rubber Underlay 18mm
Rumpus/Family	Suspended Timber Floor 19mm	44.30	Enclosed	Bulk Insulation in Contact with Floor R3	Carpet+Rubber Underlay 18mm
Lift	Suspended Timber Floor 19mm	2.50	Enclosed	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm
Lift/Lift	Timber Above Plasterboard 19mm	2.60		No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Hall/Guest	Timber Above Plasterboard 19mm	3.80		No Insulation	Carpet+Rubber Underlay 18mm
Hall/Foyer/Hall	Timber Above Plasterboard 19mm	3.10		No Insulation	Carpet+Rubber Underlay 18mm
Parents Retreat/Kitchen/Lounge	Timber Above Plasterboard 100mm	1.40		No Insulation	Carpet+Rubber Underlay 18mm
Parents Retreat/Media	Timber Above Plasterboard 100mm	13.40		No Insulation	Carpet+Rubber Underlay 18mm
Parents Retreat/Buttlers Pantry	Timber Above Plasterboard 100mm	3.80		No Insulation	Carpet+Rubber Underlay 18mm
Stair/Kitchen/Lounge	Timber Above Plasterboard 100mm	6.20		No Insulation	Carpet+Rubber Underlay 18mm
WIR Retreat/Kitchen/Lounge	Timber Above Plasterboard 100mm	1.90		No Insulation	Carpet+Rubber Underlay 18mm
WIR Retreat/Study	Timber Above Plasterboard 100mm	4.80		No Insulation	Carpet+Rubber Underlay 18mm
WIR Retreat/Kitchen/Lounge	Timber Above Plasterboard 100mm	9.60		No Insulation	Carpet 10mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Powder	Timber Above Plasterboard	No Insulation	No
Store/Study	Timber Above Plasterboard	No Insulation	No
Stairwell	Timber Above Plasterboard	No Insulation	No
Bed 5	Timber Above Plasterboard	No Insulation	No
Bath	Timber Above Plasterboard	No Insulation	No
Ensuite Bed 4	Timber Above Plasterboard	No Insulation	No
Bed 4	Timber Above Plasterboard	No Insulation	No
Guest	Timber Above Plasterboard	No Insulation	No
Foyer/Hall	Plasterboard	Bulk Insulation R5	No
Foyer/Hall	Timber Above Plasterboard	No Insulation	No
Laundry Chute	Timber Above Plasterboard	No Insulation	No
Kitchen/Lounge	Plasterboard	Bulk Insulation R5	No
Kitchen/Lounge	Timber Above Plasterboard	No Insulation	No
Bed 3	Plasterboard	Bulk Insulation R5	No
Media	Timber Above Plasterboard	No Insulation	No
Study	Timber Above Plasterboard	No Insulation	No
Bath Upper	Plasterboard	Bulk Insulation R5	No
Ensuite Bed 2	Plasterboard	Bulk Insulation R5	No
Bed 2	Plasterboard	Bulk Insulation R5	No
LDY Chute Upper	Plasterboard	Bulk Insulation R5	No
Buttlers Pantry	Timber Above Plasterboard	No Insulation	No
Rumpus/Family	Timber Above Plasterboard	No Insulation	No
Lift	Timber Above Plasterboard	No Insulation	No



Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Lift	Plasterboard	Bulk Insulation R5	No
Hall	Plasterboard	Bulk Insulation R5	No
Parents Retreat	Plasterboard	Bulk Insulation R5	No
Stair	Plasterboard	Bulk Insulation R5	No
WIR Retreat	Plasterboard	Bulk Insulation R5	No
WIR Retreat	Plasterboard	Bulk Insulation R5	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm <sup>2</sup> )	Sealed/unsealed
Powder	1	Exhaust Fans	0	Sealed
Bath	1	Exhaust Fans	0	Sealed
Ensuite Bed 4	1	Exhaust Fans	0	Sealed
Bath Upper	1	Exhaust Fans	300	Sealed
Ensuite Bed 2	1	Exhaust Fans	300	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.30	Light
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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	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.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	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.
<b>Exposure category – exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category – open</b>	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).
<b>Exposure category – suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category – protected</b>	terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	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 <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	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 <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (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.
<b>Roof window</b>	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.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	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.
<b>Skylight</b> (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.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	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).