

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0009423641

Generated on 02 May 2024 using AccuRate Sustainability V2.4.3.21 SP1

Property

Address 12 Hubert Street,
Freshwater, NSW, 2096

Lot/DP Lot A DP 18993

NCC Class* 1a

Type New Home

Plans

Main plan S4.55 Modifications 24-02-24

Prepared by Dickie Design

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 227.6	Suburban
Unconditioned* 65.0	NatHERS climate zone
Total 292.6	56
Garage 41.7	



Accredited assessor

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Assessor Accrediting Organisation

ABSA

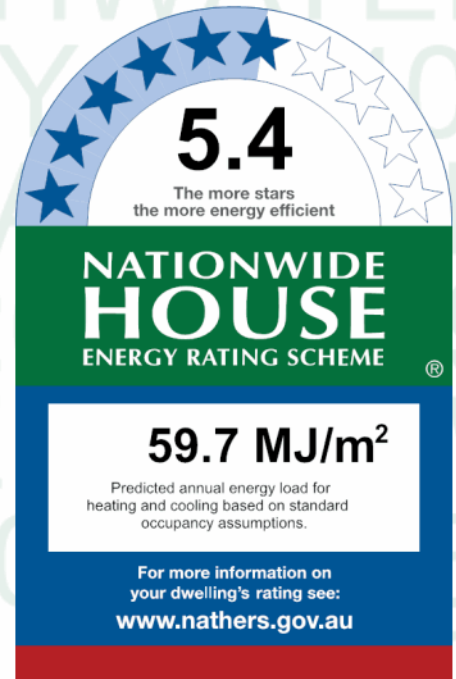
Declaration of interest Declaration completed: no conflicts

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.

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



Thermal performance

Heating	Cooling
39.0	20.7
MJ/m 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.

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=LyyGJyTQo. When using either link, ensure you are visiting 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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
TIM-002-03 W	Timber B SG High Solar Gain Low-E	4.3	0.50	0.48	0.53
TIM-002-01 W	Timber B SG Clear	5.4	0.63	0.60	0.66
TIM-001-03 W	Timber A SG High Solar Gain Low-E	4.3	0.42	0.40	0.44

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*
Office	TIM-002-03 W	CSW1221	1200	2100	Sliding	40	E	None
Rumpus	TIM-002-03 W	TSD1436	1400	3600	Sliding	40	W	None
Rumpus	TIM-002-03 W	TFW1416	1400	1660	Other	00	S	None
H1	TIM-002-03 W	TFW2216	2280	1660	Other	00	W	None
H1	TIM-002-03 W	TFW2016	2000	1660	Other	00	W	None
H1	TIM-002-03 W	TFW1716	1700	1660	Other	00	N	None
H1	TIM-002-03 W	TFW2016	2000	1660	Other	00	N	None
Bath (was Powder)	TIM-002-01 W	TFW1612	1600	1200	Other	00	S	None
Bath (was Powder)	TIM-002-01 W	TLW1606	1600	600	Louvre	90	S	None
Pantry	TIM-001-03 W	TAW0612	600	1200	Awning	90	S	None
Kitchen Living	TIM-002-03 W	TSD2448	2400	4800	Sliding	40	N	None
Kitchen Living	TIM-002-03 W	TSD2448	2400	4800	Sliding	40	N	None
Kitchen Living	TIM-002-03 W	TSD2438	2400	4800	Sliding	40	W	None
Kitchen Living	TIM-002-03 W	THL1248	1214	4800	Other	00	W	None
Kitchen Living	TIM-002-03 W	TSW0630	600	3000	Sliding	30	S	None
B1 & WIR	TIM-002-03 W	TLW0424	450	2400	Louvre	40	N	None
B1 & WIR	TIM-002-03 W	TSD2421	2400	2100	Sliding	40	E	None
B1 & WIR	TIM-002-03 W	TLW2106	2100	600	Louvre	90	S	None
Ensuite	TIM-002-03 W	TLW0416	450	1600	Louvre	30	N	None
Ensuite	TIM-002-03 W	TLW0416	450	1600	Louvre	30	S	None
H2	TIM-002-03 W	TFW2016	2000	1660	Other	00	E	None
B2	TIM-002-03 W	TSD2421	2400	2100	Sliding	40	E	None
B3	TIM-002-03 W	TSD2421	2400	2100	Sliding	40	E	None
Bath	TIM-002-01 W	TLW1206	1200	600	Louvre	90	S	None
B4	TIM-002-03 W	TSW0630	600	3000	Sliding	40	S	None

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2400	5400	100	E
Entry	2400	1500	100	E
Laundry	2280	860	100	S

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Timber/Plasterboard	30	Light	Rockwool batt (k = 0.033): R2.7	No
EW-003	Retaining Concrete wall/Plasterboard	50	Medium		No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-002	3000	6100	S		No
Garage	EW-002	3000	6800	E		Yes
Garage	EW-002	3100	3000	N	6200	Yes
Garage	EW-003	300	3000	N		No
Garage	EW-003	300	6800	W		No
Entry	EW-002	2700	1800	E	3100	Yes
Office	EW-002	2700	1400	S	1800	Yes
Office	EW-002	2700	4200	E	1500	Yes
Office	EW-002	2700	3200	N		Yes
Rumpus	EW-002	2700	5400	N		Yes
Rumpus	EW-002	1800	4200	W	800	Yes
Rumpus	EW-002	1800	2100	S	1800	Yes
Rumpus	EW-003	900	4200	W		No
Rumpus	EW-003	900	2100	S		No
H1	EW-002	4500	1800	W		Yes
H1	EW-003	900	1800	W		No
H1	EW-003	900	1700	N		No
H1	EW-003	900	2200	W		No
H1	EW-002	4500	1700	N	4000	Yes
Bath (was Powder)	EW-002	2700	2100	S		No
Bath (was Powder)	EW-003	900	1000	N		No
Pantry	EW-002	2700	2000	S		No
Pantry	EW-003	900	2000	N		No

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Pantry	EW-003	900	4500	W		No
Kitchen Living	EW-002	2850	12400	N	800	Yes
Kitchen Living	EW-002	3825	6800	W	800	Yes
Kitchen Living	EW-002	2850	10000	S		No
B1 & WIR	EW-002	2400	6800	N	200	Yes
B1 & WIR	EW-002	3000	4200	E	1540	Yes
B1 & WIR	EW-002	2400	3500	S	1800	Yes
B1 & WIR	EW-002	2400	300	S	1800	Yes
Ensuite	EW-002	2400	2200	N	200	Yes
Ensuite	EW-002	3000	4200	W	200	Yes
Ensuite	EW-002	2400	1800	S	1800	Yes
H2	EW-002	2400	1800	E		Yes
B2	EW-002	2400	3500	N	1800	Yes
B2	EW-002	3400	3350	E	1540	Yes
B3	EW-002	2400	3500	S	200	No
B3	EW-002	3400	3350	E	1540	Yes
Bath	EW-002	2400	2190	S	200	No
B4	EW-002	2400	3350	S	200	No
B4	EW-002	2105	4500	W		No
Laundry	EW-002	2700	1850	S		No
PT Panty Top	EW-002	750	1400	W		No

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-001	Plasterboard	143.89	
IW-002	Plasterboard	85.98	Glass fibre batt: R2.0
IW-003	Glass	20.46	

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation (R-value)	Covering
Garage/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Trowel Finish (R0.0 insul underl)	41.70		
Entry/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Polished floor (R0.0 insul underl)	5.70		
Office/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Polished floor (R0.0 insul underl)	13.00		
Rumpus/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Polished floor (R0.0 insul underl)	23.20		
H1/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Polished floor (R0.0 insul underl)	10.30		
Bath (was Powder)/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Ceramic tile floor (R0.0 insul underl)	9.40		Ceramic tile
Pantry/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Ceramic tile floor (R0.0 insul underl)	9.10		Ceramic tile
Kitchen Living/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Polished floor (R0.0 insul underl)	71.60		
B1 & WIR/Office	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	13.00		Carpet 10 + rubber underlay 8
B1 & WIR/Rumpus	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	15.60		Carpet 10 + rubber underlay 8
Ensuite/Rumpus	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R0.0 bulk insul	7.60		Ceramic tile
H2/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	4.60	R2.0	Carpet 10 + rubber underlay 8
H2/Entry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	2.20		Carpet 10 + rubber underlay 8
H2/H1	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	3.20		Carpet 10 + rubber underlay 8
H2/Laundry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	2.00		Carpet 10 + rubber underlay 8
B2/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	12.10	R2.0	Carpet 10 + rubber underlay 8
B3/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	12.10	R2.0	Carpet 10 + rubber underlay 8
Bath/Garage	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R2.0 bulk insul	2.90	R2.0	Ceramic tile

Location	Construction	Area Sub-floor (m ²)	Added insulation (R-value)	Covering
Bath/Laundry	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R0.0 bulk insul	2.60		Ceramic tile
B4/Bath (was Powder)	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	9.40		Carpet 10 + rubber underlay 8
B4/Pantry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	3.00		Carpet 10 + rubber underlay 8
B4/Laundry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul	3.80		Carpet 10 + rubber underlay 8
Laundry/Ground	as_FLOR-B001 #2051 © 100mm Concrete Floor slab with Ceramic tile floor (R0.0 insul underl)	8.40		Ceramic tile
PT Panty Top/Pantry	as_FLOR-B010 #1001 © Framed flr with Pyneboard finish + R0.0 PB ceiling under	6.10		

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
H2/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	R2.0	No
B2/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	R2.0	No
B3/Garage	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R2.0 bulk insul	R2.0	No
Bath/Garage	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R2.0 bulk insul	R2.0	No
H2/Entry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
B1 & WIR/Office	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
B1 & WIR/Rumpus	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
Ensuite/Rumpus	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R0.0 bulk insul		No
H2/H1	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
B4/Bath (was Powder)	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
B4/Pantry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
PT Panty Top/Pantry	as_FLOR-B010 #1001 © Framed flr with Pyneboard finish + R0.0 PB ceiling under		No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
H2/Laundry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No
Bath/Laundry	as_FLOR-B014 #2016 © Framed flr with Ceramic Tile - Plasterboard ceiling under - R0.0 bulk insul		No
B4/Laundry	as_FLOR-B014 #2016 © Framed flr with carpet-underfelt - Plasterboard ceiling under - R0.0 bulk insul		No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Entry	2	Downlight	0	Sealed
Office	5	Downlight	0	Sealed
Rumpus	9	Downlight	0	Sealed
H1	3	Downlight	0	Sealed
Bath (was Powder)	3	Downlight	0	Sealed
Pantry	4	Downlight	0	Sealed
Kitchen Living	34	Downlight	0	Sealed
B1 & WIR	11	Downlight	0	Sealed
Ensuite	4	Downlight	0	Sealed
H2	4	Downlight	0	Sealed
B2	5	Downlight	0	Sealed
B3	5	Downlight	0	Sealed
Bath	2	Downlight	0	Sealed
B4	6	Downlight	0	Sealed
Laundry	3	Downlight	0	Sealed
PT Panty Top	2	Downlight	0	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Rumpus	1	1400
Kitchen Living	2	1400

Location	Quantity	Diameter (mm)
B1 & WIR	1	1400
B2	1	1400
B3	1	1400
B4	1	1400

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Tiled Balcony - framed + R2.0 + Plasterboard	R2.0	50	Medium
Horiz pitch Colourbond steel roof + Anticon R1.0 insul with R5.0 bulk insul + Plasterb'd ceiling under	R6.0	50	Medium
as_ROOF-A011 #E015 © 30 deg Colourbond steel roof + Anticon R1.0 insul with R5.0 bulk insul + Plasterb'd ceiling under	R6.0	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).