

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008635443

Generated on 10 May 2023 using BERS Pro v4.4.1.5 (3.21)

Property

Address Unit A, 2 Stephenson Street , Roselands , NSW , 2196
Lot/DP 46/12431
NCC Class* 1A
Type New Dwelling

Plans

Main plan n/a
Prepared by n/a

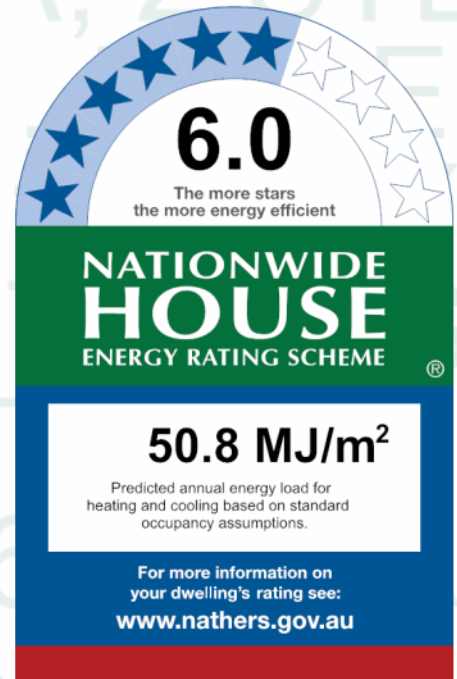
Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 202.0	Suburban
Unconditioned* 46.0	NatHERS climate zone
Total 248.0	56
Garage 33.0	



Accredited assessor

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Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration not completed



Thermal performance

Heating	Cooling
25.4	25.4
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=wcHCnnuVg. 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? 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

Rated with provisional values for downlights.

Rated with AWS windows.

Ceiling height on the Ground Floor is measured from the section.

Ready wall 110mm with insulation and hebel external cladding is rated as concrete wall 110mm, externally

insulated with R2.5 insulation (it is assumed that the frame structure is timber).

Rated with lightweight internal walls/worst case scenario.

Rated with construction elements as requested in a separate e-mail.

Number 3 from the material schedule is rated with medium colour. Rated with wall colours as per the material

schedule (solar absorptance is calculated in the BERS software custom colours tool).

D06/G-08, D06/G-09 are rated as timber framed glass doors.

Dimensions on the sliding doors on the Sitting area-FFx2 and Main Bed-FF are measured from the elevations.

Rated with provisional opening percentage for the windows not clearly showing opening percentage.

Rated with vertical louvres, vertical blades as shown on the elevation.

Rated with ceiling fans (1200mm)/as shown on the plans.

All coffer ceiling verticals and walls against the roof-space, to be insulated, with the same insulation as the ceiling insulation.

All downlights IC-F / IC-4 / (insulation covered/including the control gears) rated as per AS/NZS standard 60598

and IP (sealed) rated as per BS EN 60529:1992, European IEC 60509:1989.

(Where the roof is extended over an open area such as deck or carport): A barrier to be installed within the roof

space to separate the space above the zoned part of the house and the space above the open veranda.

I have modeled the shading in accordance with NatHERS principles

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-002-04 A	ALM-002-04 A Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-001-01 A	AWS-001-01 A 502/504 Al Sliding Window SG 3Clr	6.4	0.73	0.69	0.77
AWS-066-02 A	AWS-066-02 A RES SERIES 516 FIXED WINDOW SG 638ComPlyNtl	3.9	0.47	0.45	0.49
AWS-001-05 A	AWS-001-05 A 502/504 Al Sliding Window SG 6.38CP	4.6	0.45	0.43	0.47
AWS-007-07 A	AWS-007-07 A 516 Al Awining Window SG 6.38CP	4.9	0.41	0.39	0.43
AWS-011-06 A	AWS-011-06 A 541/542 Al Sliding Door SG 6.38CP	4.4	0.45	0.43	0.47

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Doub Garage	AWS-001-01 A	n/a	1700	2500	n/a	45	SE	No
Ktch/Liv/Din	AWS-066-02 A	n/a	2100	1090	n/a	00	SW	Yes
Ktch/Liv/Din	AWS-001-05 A	n/a	1500	2000	n/a	45	NW	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Ktch/Liv/Din	ALM-002-04 A	n/a	1510	3020	n/a	75	NE	No
Ktch/Liv/Din	AWS-001-05 A	n/a	1500	3389	n/a	60	NE	No
Ktch/Liv/Din	ALM-002-04 A	n/a	2510	5220	n/a	75	NE	No
Ktch/Liv/Din	AWS-001-05 A	n/a	1500	1330	n/a	45	SE	No
Ktch/Liv/Din	AWS-001-05 A	n/a	1500	1330	n/a	45	SE	No
Ldry/Ptry-GF	TIM-001-01 W	n/a	2300	1072	n/a	90	NW	No
Bath/Bed 1-GF	AWS-007-07 A	n/a	700	700	n/a	90	NW	No
Bed 1-GF	AWS-001-05 A	n/a	1500	2850	n/a	45	SW	No
Bed 1-GF	TIM-001-01 W	n/a	2300	1072	n/a	90	NW	No
Main Bed-FF	AWS-001-05 A	n/a	1800	2800	n/a	10	NW	No
Main Bed-FF	AWS-011-06 A	n/a	2600	3100	n/a	60	SW	No
Ens/M.Bed-FF	AWS-007-07 A	n/a	700	1000	n/a	90	NW	No
Bed 2-FF	AWS-001-05 A	n/a	1500	2398	n/a	10	NW	No
Bed 2-FF	AWS-001-05 A	n/a	1500	2398	n/a	10	NE	No
Sitting/St-FF	AWS-011-06 A	n/a	2600	3100	n/a	60	NE	No
Sitting/St-FF	AWS-011-06 A	n/a	2100	1800	n/a	45	SW	No
Sitting/St-FF	AWS-066-02 A	n/a	2600	1090	n/a	00	SW	Yes
Sitting/St-FF	AWS-066-02 A	n/a	2500	300	n/a	00	SW	No
Sitting/St-FF	AWS-066-02 A	n/a	2500	300	n/a	00	SW	No
Sitting/St-FF	AWS-066-02 A	n/a	2500	300	n/a	00	SW	No
Sitting/St-FF	AWS-066-02 A	n/a	2500	300	n/a	00	SW	No
Sitting/St-FF	AWS-066-02 A	n/a	2500	300	n/a	00	SW	No
Bed 3-FF	AWS-001-05 A	n/a	1500	2398	n/a	10	NE	No
Bath-FF	AWS-007-07 A	n/a	700	1000	n/a	90	SW	No
Bath-FF	AWS-007-07 A	n/a	700	1000	n/a	90	SW	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit

No Data Available

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
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No Data Available

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Doub Garage	2400	4500	90	SW
Ktch/Liv/Din	2192	910	90	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up Concrete	0.50	Medium	Bulk Insulation R2.5	No
EW-2	Tilt up Concrete	0.50	Medium	No insulation	No
EW-3	Tilt up Concrete	0.71	Dark	Bulk Insulation R2.5	No
EW-4	Tilt up Concrete	0.27	Light	Bulk Insulation R2.5	No

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-5	AAC cavity panel on battens	0.50	Medium	Bulk Insulation R2.5	No
EW-6	AAC cavity panel on battens	0.27	Light	Bulk Insulation R2.5	No
EW-7	AAC cavity panel on battens	0.71	Dark	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Doub Garage	EW-1	2700	1500	NW	100	YES
Doub Garage	EW-1	2700	5495	SE	100	NO
Doub Garage	EW-2	2700	6100	SW	100	NO
Ktch/Liv/Din	EW-3	2701	1395	SW	300	YES
Ktch/Liv/Din	EW-3	2700	2095	SW	2200	YES
Ktch/Liv/Din	EW-4	2700	3795	NW	100	YES
Ktch/Liv/Din	EW-4	2701	3600	NE	100	NO
Ktch/Liv/Din	EW-3	2700	4100	NE	1600	NO
Ktch/Liv/Din	EW-3	2701	5600	NE	100	NO
Ktch/Liv/Din	EW-3	2700	5695	SE	100	NO
Ldry/Ptry-GF	EW-3	2700	1695	NW	100	YES
Ldry/Ptry-GF	EW-3	2700	700	NE	100	YES
Bath/Bed 1-GF	EW-4	2700	2295	NW	100	NO
Bath/Bed 1-GF	EW-4	2700	500	NE	200	YES
Bed 1-GF	EW-4	2700	1600	SE	2100	YES
Bed 1-GF	EW-4	2700	4900	SW	600	NO
Bed 1-GF	EW-4	2701	1100	NW	600	NO
Bed 1-GF	EW-4	2700	2395	NW	100	NO
Main Bed-FF	EW-5	2700	4800	NW	600	NO
Main Bed-FF	EW-6	2700	500	NE	5600	YES
Main Bed-FF	EW-5	2700	600	SE	100	YES
Main Bed-FF	EW-5	2700	4900	SW	1600	NO
Ens/M.Bed-FF	EW-7	2700	1695	NW	500	YES

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Ens/M.Bed-FF	EW-7	2700	700	NE	3900	YES
Bed 2-FF	EW-6	2700	3795	NW	1200	YES
Bed 2-FF	EW-6	2700	3400	NE	100	NO
Bed 2-FF	EW-6	2701	295	NE	1600	NO
Sitting/St-FF	EW-6	2700	3995	NE	1600	NO
Sitting/St-FF	EW-6	2701	1895	NE	100	NO
Sitting/St-FF	EW-7	2700	2395	SW	1700	YES
Sitting/St-FF	EW-6	2701	1700	SE	2700	YES
Sitting/St-FF	EW-6	2700	2300	SE	100	NO
Sitting/St-FF	EW-7	2701	1400	SW	300	NO
Sitting/St-FF	EW-7	2700	2095	SW	100	YES
Bed 3-FF	EW-7	2700	3695	NE	100	NO
Bed 3-FF	EW-7	2700	4095	SE	100	NO
Bath-FF	EW-7	2700	1595	SE	100	NO
Bath-FF	EW-7	2700	3400	SW	100	NO
Bath-FF	EW-7	2701	295	SW	1700	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		27.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		131.00	No insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Doub Garage	Concrete Slab on Ground 100mm	33.10	None	No Insulation	Bare
Ktch/Liv/Din	Concrete Slab on Ground 100mm	81.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Ldry/Ptry-GF	Concrete Slab on Ground 100mm	7.00	None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area Sub-floor (m ²)	ventilation	Added insulation (R-value)	Covering
Bath/Bed 1-GF	Concrete Slab on Ground 100mm	6.60	None	No Insulation	Ceramic Tiles 8mm
Bed 1-GF	Concrete Slab on Ground 100mm	18.40	None	No Insulation	Carpet+Rubber Underlay 18mm
WC-GF	Concrete Slab on Ground 100mm	2.40	None	No Insulation	Ceramic Tiles 8mm
Main Bed-FF/Bath/Bed 1-GF	Concrete Above Plasterboard 19mm	6.80		No Insulation	Carpet+Rubber Underlay 18mm
Main Bed-FF/Bed 1-GF	Concrete Above Plasterboard 19mm	13.60		No Insulation	Carpet+Rubber Underlay 18mm
Main Bed-FF/WC-GF	Concrete Above Plasterboard 19mm	2.70		No Insulation	Carpet+Rubber Underlay 18mm
Ens/M.Bed-FF/Ldry/Ptry-GF	Concrete Above Plasterboard 19mm	7.00		No Insulation	Ceramic Tiles 8mm
Bed 2-FF/Ktch/Liv/Din	Concrete Above Plasterboard 19mm	13.70		No Insulation	Carpet+Rubber Underlay 18mm
Sitting/St-FF/Ktch/Liv/Din	Concrete Above Plasterboard 19mm	46.90		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3-FF/Ktch/Liv/Din	Concrete Above Plasterboard 19mm	14.80		No Insulation	Carpet+Rubber Underlay 18mm
Bath-FF/Ktch/Liv/Din	Concrete Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Doub Garage	Concrete, Plasterboard	Bulk Insulation R2.5	No
Ktch/Liv/Din	Concrete Above Plasterboard	No Insulation	No
Ldry/Ptry-GF	Concrete Above Plasterboard	No Insulation	No
Bath/Bed 1-GF	Concrete Above Plasterboard	No Insulation	No
Bed 1-GF	Concrete, Plasterboard	Bulk Insulation R5	No
Bed 1-GF	Concrete Above Plasterboard	No Insulation	No
WC-GF	Concrete Above Plasterboard	No Insulation	No
Main Bed-FF	Plasterboard	Bulk Insulation R5	No
Ens/M.Bed-FF	Plasterboard	Bulk Insulation R5	No
Bed 2-FF	Plasterboard	Bulk Insulation R5	No
Sitting/St-FF	Plasterboard	Bulk Insulation R5	No
Bed 3-FF	Plasterboard	Bulk Insulation R5	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath-FF	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
Ktch/Liv/Din	33	Downlights - LED	50	Sealed
Ktch/Liv/Din	1	Exhaust Fans	300	Sealed
Ldry/Ptry-GF	2	Downlights - LED	50	Sealed
Bath/Bed 1-GF	2	Downlights - LED	50	Sealed
Bed 1-GF	7	Downlights - LED	50	Sealed
WC-GF	1	Downlights - LED	50	Sealed
WC-GF	1	Exhaust Fans	300	Sealed
Main Bed-FF	9	Downlights - LED	50	Sealed
Ens/M.Bed-FF	2	Downlights - LED	50	Sealed
Bed 2-FF	5	Downlights - LED	50	Sealed
Sitting/St-FF	19	Downlights - LED	50	Sealed
Bed 3-FF	6	Downlights - LED	50	Sealed
Bath-FF	2	Downlights - LED	50	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Ktch/Liv/Din	2	1200
Main Bed-FF	1	1200
Bed 2-FF	1	1200
Sitting/St-FF	2	1200
Bed 3-FF	1	1200

Roof type

Construction	Added Insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.33	Light

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).