Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0004929055-02

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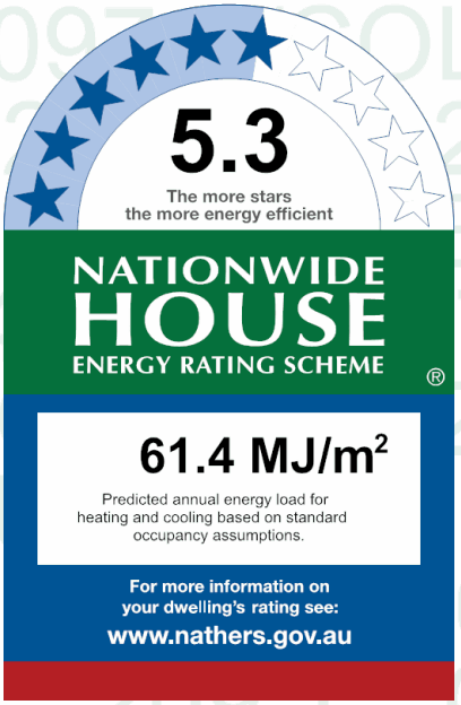

Property

Address	Hay Street , Collaroy , NSW , 2097
Lot/DP	21/7392
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	17428
Prepared by	Wincrest Bespoke - HT

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	322.0	Suburban
Unconditioned*	70.0	**NatHERS climate zone**
Total	392.0	56
Garage	48.0	

Thermal performance

Heating	Cooling
38.4 MJ/m^2	23.0 MJ/m^2

Accredited assessor

Name	Daniel.Warda
Business name	Energi Thermal Assessors Pty Ltd
Email	daniel@energiassessments.com.au
Phone	0452504125
Accreditation No.	101182
Assessor Accrediting Organisation	ABSA
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.

Verification

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

* 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

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-003-04 A	WID-003-04 A Al Residential Double Hung Window SG 6.38CP	4.4	0.44	0.42	0.46
WID-028-09 A	WID-028-09 A BSW Ascend Sliding Window SG 5mmClr	6.6	0.62	0.59	0.65
WID-022-09 A	WID-022-09 A Alu Semi Comm ASCEND Awning SG 5mmClr	5.9	0.58	0.55	0.61

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-011-13 A	WID-011-13 A Al Architectural Paragon Stacker Door SG 6CS_Clr	5.0	0.53	0.50	0.56
WID-032-05 A	WID-032-05 A BSSD Ascend Sliding Stacker Door SG 6mmCS	4.5	0.57	0.54	0.60
WID-004-01 A	WID-004-01 A Al Residential Entry Frame / Door SG 4Clr	5.9	0.60	0.57	0.63
WID-003-01 A	WID-003-01 A Al Residential Double Hung Window SG 3Clr	6.2	0.74	0.70	0.78

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 5	WID-003-04 A	n/a	2050	1810	n/a	30	W	No
Bedroom 5	ALM-004-01 A	n/a	2050	610	n/a	00	W	No
B5 Ensuite	WID-028-09 A	n/a	600	1090	n/a	45	N	No
Media	WID-028-09 A	n/a	600	1810	n/a	45	N	No
Media	WID-028-09 A	n/a	600	1810	n/a	45	N	No
Scullery/WIP	WID-022-09 A	n/a	600	2650	n/a	00	S	No
Kitchen/Living	WID-028-09 A	n/a	600	1450	n/a	45	N	No
Kitchen/Living	WID-028-09 A	n/a	600	1450	n/a	45	N	No
Kitchen/Living	WID-011-13 A	n/a	2700	4750	n/a	60	E	No
Kitchen/Living	WID-011-13 A	n/a	2700	4050	n/a	60	N	No
Kitchen/Living	WID-032-05 A	n/a	2700	4140	n/a	60	E	No
Living	WID-003-04 A	n/a	1030	1570	n/a	30	N	No
Living	WID-003-04 A	n/a	1030	1570	n/a	30	N	No
Living	ALM-004-01 A	n/a	2057	1800	n/a	00	N	No
Living	WID-004-01 A	n/a	2100	3010	n/a	45	W	No
Bedroom 2	WID-003-04 A	n/a	1029	2650	n/a	30	S	No
Bedroom 3	ALM-004-01 A	n/a	600	2410	n/a	45	S	No
Bedroom 3	WID-003-04 A	n/a	1200	2650	n/a	30	W	No
Bath	WID-003-01 A	n/a	1200	1450	n/a	30	S	No
Bedroom 4	WID-003-04 A	n/a	1029	2650	n/a	30	N	No
Bedroom 4	WID-003-04 A	n/a	1029	1810	n/a	30	E	No
Bedroom 1	WID-003-04 A	n/a	1029	2650	n/a	30	N	No
Bedroom 1	WID-032-05 A	n/a	2340	2676	n/a	60	E	No
B1 Ensuite	WID-003-01 A	n/a	1200	1450	n/a	30	S	No

* Refer to glossary.

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
DG-Generic-02 A	Glass	0.7	0.75	0.71	0.79

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
Kitchen/Living	DG-Generic-02 A	n/a	0	1180	780	N	No	No
Kitchen/Living	DG-Generic-02 A	n/a	0	1180	780	N	No	No

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^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Living	GEN-04-008a	n/a	1150	1.30	N	None	No	0.50
Bath	GEN-04-008a	n/a	1150	0.40	S	None	No	0.50
B1 Ensuite	GEN-04-008a	n/a	1150	0.40	S	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry	2340	1200	90	W
Garage 1	2400	5300	90	W
Laundry	2340	896	90	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.85	Dark	Bulk Insulation R2.5	No
EW-2	Brick Veneer	0.85	Dark	No insulation	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-3	Single Skin Brick	0.85	Dark	No insulation	No
EW-4	Fibro Cavity Panel Direct Fix	0.85	Dark	Anti-glare foil with bulk no gap R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 5	EW-1	2700	3900	N	700	NO
Bedroom 5	EW-1	2700	1300	E	700	YES
Bedroom 5	EW-1	2700	1000	S	8900	YES
Bedroom 5	EW-1	2700	4100	W	1500	NO
B5 Ensuite	EW-1	2700	1590	N	100	YES
Entry	EW-1	2700	2290	N	100	YES
Entry	EW-1	2700	2090	W	2500	YES
Media	EW-1	2700	1300	W	700	YES
Media	EW-1	2700	4900	N	700	NO
Media	EW-1	2700	700	E	11100	YES
Garage 1	EW-2	2700	900	E	700	YES
Garage 1	EW-2	2700	8000	S	700	NO
Garage 1	EW-3	2700	6100	W	700	NO
Garage 1	EW-2	2700	900	N	6900	YES
Mudroom	EW-1	2700	2095	S	100	YES
Laundry	EW-1	2700	2490	S	100	YES
Scullery/WIP	EW-1	3129	1400	E	700	YES
Scullery/WIP	EW-1	3129	6000	S	800	NO
Scullery/WIP	EW-1	3129	1400	W	700	YES
Kitchen/Living	EW-1	3129	5895	N	800	YES
Kitchen/Living	EW-1	3129	5600	E	5200	YES
Kitchen/Living	EW-1	3129	4500	N	6400	YES
Kitchen/Living	EW-1	3129	5100	E	5800	NO
Kitchen/Living	EW-1	3129	4395	S	100	YES
Living	EW-4	2550	7795	N	700	NO
Living	EW-4	2550	1000	S	5900	YES
Living	EW-4	2550	4900	W	2000	NO
Bedroom 2	EW-4	2550	3790	S	700	NO
Bedroom 3	EW-4	2550	3795	S	700	NO
Bedroom 3	EW-4	2550	5195	W	700	YES
Bath	EW-4	2550	3090	S	700	NO
Bedroom 4	EW-4	2550	3895	N	700	NO
Bedroom 4	EW-4	2550	3395	E	700	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-4	2550	6895	N	700	YES
Bedroom 1	EW-4	2550	4995	E	3000	NO
B1 WIR	EW-4	2550	2495	E	3000	NO
B1 WIR	EW-4	2550	4900	S	700	NO
B1 WIR	EW-4	2550	800	W	13400	YES
B1 Ensuite	EW-4	2550	1990	S	700	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		107.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		65.00	Bulk Insulation, No Air Gap R2.5
IW-3 - Cavity wall, direct fix plasterboard, single gap		127.00	Bulk Insulation, No Air Gap R2.7

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 5	Waffle pod slab 300 mm 100mm	14.40	None	Waffle Pod 300mm	Carpet 10mm
B5 Ensuite	Waffle pod slab 300 mm 100mm	5.40	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Entry	Waffle pod slab 300 mm 100mm	35.30	None	Waffle Pod 300mm	Cork Tiles or Parquetry 8mm
Media	Waffle pod slab 300 mm 100mm	19.60	None	Waffle Pod 300mm	Carpet 10mm
Garage 1	Waffle pod slab 300 mm 100mm	48.20	None	Waffle Pod 300mm	Bare
Powder	Waffle pod slab 300 mm 100mm	2.10	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Mudroom	Waffle pod slab 300 mm 100mm	5.30	None	Waffle Pod 300mm	Cork Tiles or Parquetry 8mm
Laundry	Waffle pod slab 300 mm 100mm	8.30	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Scullery/WIP	Waffle pod slab 300 mm 100mm	10.50	None	Waffle Pod 300mm	Cork Tiles or Parquetry 8mm
Kitchen/Living	Waffle pod slab 300 mm 100mm	84.00	None	Waffle Pod 300mm	Cork Tiles or Parquetry 8mm
Living/Bedroom 5	AAC Above Plasterboard 75mm	9.40		Bulk Insulation R2.7	Carpet 10mm
Living/B5 Ensuite	AAC Above Plasterboard 75mm	5.70		Bulk Insulation R2.7	Carpet 10mm
Living/Entry	AAC Above Plasterboard 75mm	25.70		Bulk Insulation R2.7	Carpet 10mm
Living	Suspended AAC (75mm) 75mm	2.10	Totally Open	No Insulation	Carpet 10mm
Bedroom 2/Entry	AAC Above Plasterboard 75mm	1.20		Bulk Insulation R2.7	Carpet 10mm
Bedroom 2/Garage 1	AAC Above Plasterboard 75mm	16.60		Bulk Insulation R2.7	Carpet 10mm
Bedroom 2/Mudroom	AAC Above Plasterboard 75mm	1.30		Bulk Insulation R2.7	Carpet 10mm
Bedroom 3/Garage 1	AAC Above Plasterboard 75mm	19.40		Bulk Insulation R2.7	Carpet 10mm
Bath/Entry	AAC Above Plasterboard 75mm	3.90		Bulk Insulation R2.7	Ceramic Tiles 8mm
Bath/Powder	AAC Above Plasterboard 75mm	2.30		Bulk Insulation R2.7	Ceramic Tiles 8mm
Bath/Mudroom	AAC Above Plasterboard 75mm	4.10		Bulk Insulation R2.7	Ceramic Tiles 8mm
Bath/Laundry	AAC Above Plasterboard 75mm	3.40		Bulk Insulation R2.7	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 4/Entry	AAC Above Plasterboard 75mm	2.30		Bulk Insulation R2.7	Carpet 10mm
Bedroom 4/Media	AAC Above Plasterboard 75mm	10.60		Bulk Insulation R2.7	Carpet 10mm
Bedroom 1/Entry	AAC Above Plasterboard 75mm	0.80		Bulk Insulation R2.7	Carpet 10mm
Bedroom 1/Kitchen/Living	AAC Above Plasterboard 75mm	25.50		Bulk Insulation R2.7	Carpet 10mm
B1 WIR/Scullery/WIP	AAC Above Plasterboard 75mm	5.70		Bulk Insulation R2.7	Carpet 10mm
B1 WIR/Kitchen/Living	AAC Above Plasterboard 75mm	6.20		Bulk Insulation R2.7	Carpet 10mm
B1 Ensuite/Entry	AAC Above Plasterboard 75mm	1.60		Bulk Insulation R2.7	Ceramic Tiles 8mm
B1 Ensuite/Laundry	AAC Above Plasterboard 75mm	4.90		Bulk Insulation R2.7	Ceramic Tiles 8mm
B1 Ensuite/Kitchen/Living	AAC Above Plasterboard 75mm	5.40		Bulk Insulation R2.7	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 5	Plasterboard	Bulk Insulation R4	No
Bedroom 5	AAC Above Plasterboard	Bulk Insulation R2.7	No
B5 Ensuite	AAC Above Plasterboard	Bulk Insulation R2.7	No
Entry	AAC Above Plasterboard	Bulk Insulation R2.7	No
Media	Plasterboard	Bulk Insulation R4	No
Media	AAC Above Plasterboard	Bulk Insulation R2.7	No
Garage 1	Plasterboard	No insulation	No
Garage 1	AAC Above Plasterboard	Bulk Insulation R2.7	No
Powder	AAC Above Plasterboard	Bulk Insulation R2.7	No
Mudroom	AAC Above Plasterboard	Bulk Insulation R2.7	No
Laundry	AAC Above Plasterboard	Bulk Insulation R2.7	No
Scullery/WIP	Plasterboard	Bulk Insulation R4	No
Scullery/WIP	AAC Above Plasterboard	Bulk Insulation R2.7	No
Kitchen/Living	Plasterboard	Bulk Insulation R4	No
Kitchen/Living	AAC Above Plasterboard	Bulk Insulation R2.7	No
Living	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
Bedroom 4	Plasterboard	Bulk Insulation R4	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
B1 WIR	Plasterboard	Bulk Insulation R4	No
B1 Ensuite	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
B5 Ensuite	1	Exhaust Fans	300	Sealed
Powder	1	Exhaust Fans	300	Sealed
Bath	1	Exhaust Fans	300	Sealed
B1 Ensuite	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
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.85	Dark

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).