Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005064407

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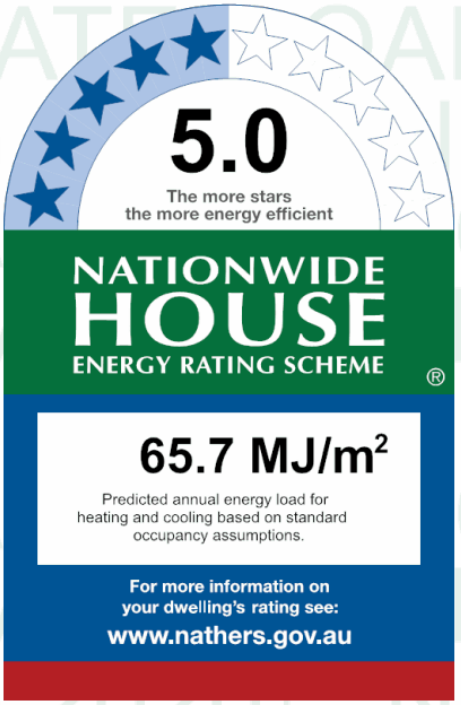

Property

Address	17 Kangaroo Road , COLLAROY PLATEAU , NSW , 2097
Lot/DP	44/11593
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Cordukes
Prepared by	ABD

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	291.0	Suburban
Unconditioned*	58.0	**NatHERS climate zone**
Total	350.0	56
Garage	36.0	

Thermal performance

Heating	Cooling
39.8	**25.8**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Brad Hoad
Business name	Thermal Performance
Email	brad@thermalperformance.com.au
Phone	0458-221-211
Accreditation No.	20731
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

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 www.hstar.com.au/QR/Generate?p=GrdVzWSml.
When using either link, ensure you are visiting www.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?

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
No Data Available					

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
GJA-082-05 A	GJA-082-05 A Type 472 Aluminium Hinged Door SG 4EA	4.7	0.54	0.54	0.54
GJA-011-05 A	GJA-011-05 A Type 130 Series Fixed Window SG 4EA	4.0	0.67	0.67	0.67
GJA-050-10 A	GJA-050-10 A 050 Series Louvre-48 Al Frame w 102 Altair SG 6EA	4.3	0.56	0.56	0.56

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
GJA-013-02 A	GJA-013-02 A Type 131 Aluminium Sliding Window SG 3EA	4.5	0.65	0.65	0.65
GJA-070-42 A	GJA-070-42 A Type 245 Aluminium Sliding Door SG 638CP	4.4	0.44	0.44	0.44
GJA-013-39 A	GJA-013-39 A Type 131 Aluminium Sliding Window SG 638CP	4.5	0.46	0.46	0.46
GJA-001-08 A	GJA-001-08 A Type 048 Series Awning Window SG 4EA	4.8	0.52	0.52	0.52

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Laundry	GJA-082-05 A	n/a	2340	820	n/a	90	N	No
Entry	GJA-011-05 A	n/a	2340	400	n/a	00	W	No
Entry	GJA-011-05 A	n/a	2340	400	n/a	00	W	No
Entry	GJA-050-10 A	n/a	2400	800	n/a	90	N	No
Entry	GJA-050-10 A	n/a	2400	800	n/a	90	W	No
Guest	GJA-013-02 A	n/a	600	2700	n/a	45	S	No
Prep	GJA-011-05 A	n/a	700	3000	n/a	00	N	No
Kit/Liv/Din	GJA-011-05 A	n/a	700	4800	n/a	00	N	No
Kit/Liv/Din	GJA-070-42 A	n/a	2400	4700	n/a	60	E	No
Kit/Liv/Din	GJA-070-42 A	n/a	2400	3400	n/a	60	S	No
Kit/Liv/Din	GJA-013-39 A	n/a	2400	4400	n/a	00	E	No
Bedroom 2	GJA-013-02 A	n/a	1200	2100	n/a	10	N	No
Bedroom 3	GJA-082-05 A	n/a	2100	1500	n/a	90	W	No
Bedroom 3	GJA-050-10 A	n/a	2100	600	n/a	90	W	No
Bedroom 4	GJA-013-02 A	n/a	430	2700	n/a	10	S	No
Bedroom 5	GJA-070-42 A	n/a	2100	3000	n/a	60	E	Yes
Bedroom 5	GJA-001-08 A	n/a	2100	800	n/a	10	S	No
Bedroom 1	GJA-070-42 A	n/a	2100	3000	n/a	60	E	Yes
Bedroom 1	GJA-001-08 A	n/a	2100	1200	n/a	10	S	No
Ensuite	GJA-050-10 A	n/a	900	600	n/a	90	N	No
Bath	GJA-001-08 A	n/a	900	1200	n/a	30	N	No
Void/Hall	GJA-011-05 A	n/a	600	400	n/a	00	S	No
Void/Hall	GJA-050-10 A	n/a	900	2700	n/a	90	W	No
Void/Hall	GJA-082-05 A	n/a	2100	780	n/a	90	W	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
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	2340	820	90	E
Garage	2200	5100	90	W
Entry	2340	1200	90	W

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	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-2	Weatherboard Cavity Panel Direct Fix	0.50	Medium	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)
Garage	EW-1	2730	6000	N	500	NO
Garage	EW-1	2730	1100	E	300	YES
Garage	EW-1	2730	5100	S	500	YES
Garage	EW-1	2730	6000	W	300	NO
Mud	EW-2	2730	2190	N	0	YES
Laundry	EW-2	2730	1995	N	0	NO
Laundry	EW-2	2730	1100	W	1900	YES
Entry	EW-2	2730	5295	S	0	NO
Entry	EW-2	2730	3000	W	2500	NO
Entry	EW-2	2730	1100	N	7700	YES
Entry	EW-2	2730	1195	W	1100	YES
Guest	EW-2	3074	5290	S	0	NO
Prep	EW-2	3074	3090	N	500	NO
Kit/Liv/Din	EW-2	3074	9995	N	500	NO
Kit/Liv/Din	EW-2	3074	5600	E	4500	NO
Kit/Liv/Din	EW-2	3074	3500	S	0	YES
Kit/Liv/Din	EW-2	3074	4600	E	1500	YES
Kit/Liv/Din	EW-2	3074	5195	S	0	NO
Bedroom 2	EW-2	2580	200	E	8700	YES
Bedroom 2	EW-2	2580	4095	N	300	YES
Bedroom 3	EW-2	2580	4195	N	500	YES
Bedroom 3	EW-2	2580	4295	W	2000	NO
Bedroom 4	EW-2	2580	4090	S	500	NO
Bedroom 5	EW-2	2580	4095	E	500	NO
Bedroom 5	EW-2	2580	4795	S	500	NO
Bedroom 1	EW-2	2580	4900	E	500	NO
Bedroom 1	EW-2	2580	4100	S	500	YES
Bedroom 1	EW-2	2580	495	E	4600	YES
Bedroom 1	EW-2	2580	4495	N	500	NO
Ensuite	EW-2	2580	3690	N	500	YES
Bath	EW-2	2580	3400	N	500	NO
Bath	EW-2	2580	500	E	12800	YES
Bath	EW-2	2580	700	W	6200	YES
Void/Hall	EW-2	2580	6895	S	500	NO
Void/Hall	EW-2	2580	5195	W	500	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		16.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		249.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Waffle pod slab 225 mm 100mm	35.70	None	Waffle Pod 225mm	Bare
Mud	Suspended Timber Floor 19mm	7.90	Enclosed	Bulk Insulation, Gap to Floor R3	Ceramic Tiles 8mm
Laundry	Suspended Timber Floor 19mm	7.80	Enclosed	Bulk Insulation, Gap to Floor R3	Ceramic Tiles 8mm
Entry	Suspended Timber Floor 19mm	26.30	Enclosed	Bulk Insulation, Gap to Floor R3	Cork Tiles or Parquetry 8mm
Guest	Suspended Timber Floor 19mm	23.20	Enclosed	Bulk Insulation, Gap to Floor R3	Carpet 10mm
Powder	Suspended Timber Floor 19mm	4.50	Enclosed	Bulk Insulation, Gap to Floor R3	Ceramic Tiles 8mm
Prep	Suspended Timber Floor 19mm	7.40	Enclosed	Bulk Insulation, Gap to Floor R3	Cork Tiles or Parquetry 8mm
Kit/Liv/Din	Suspended Timber Floor 19mm	84.20	Enclosed	Bulk Insulation, Gap to Floor R3	Cork Tiles or Parquetry 8mm
Bedroom 2/Powder	Timber Above Plasterboard 19mm	2.60		No Insulation	Carpet 10mm
Bedroom 2/Prep	Timber Above Plasterboard 19mm	3.30		No Insulation	Carpet 10mm
Bedroom 2/Kit/Liv/Din	Timber Above Plasterboard 19mm	10.30		No Insulation	Carpet 10mm
Bedroom 3/Garage	Timber Above Plasterboard 19mm	8.40		Bulk Insulation R3	Carpet 10mm
Bedroom 3/Mud	Timber Above Plasterboard 19mm	8.20		No Insulation	Carpet 10mm
Bedroom 3	Suspended Timber Floor 19mm	0.90	Totally Open	Bulk Insulation, Gap to Floor R3	Carpet 10mm
Bedroom 4/Guest	Timber Above Plasterboard 19mm	14.70		No Insulation	Carpet 10mm
Bedroom 4/Kit/Liv/Din	Timber Above Plasterboard 19mm	1.60		No Insulation	Carpet 10mm
Bedroom 5/Kit/Liv/Din	Timber Above Plasterboard 19mm	19.30		No Insulation	Carpet 10mm
Bedroom 1/Kit/Liv/Din	Timber Above Plasterboard 19mm	28.40		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 19mm	2.90	Totally Open	Bulk Insulation, Gap to Floor R3	Carpet 10mm
Ensuite/Kit/Liv/Din	Timber Above Plasterboard 19mm	6.00		No Insulation	Ceramic Tiles 8mm
Bath/Laundry	Timber Above Plasterboard 19mm	4.00		No Insulation	Ceramic Tiles 8mm
Bath/Prep	Timber Above Plasterboard 19mm	2.80		No Insulation	Ceramic Tiles 8mm
WC/Laundry	Timber Above Plasterboard 19mm	1.50		No Insulation	Ceramic Tiles 8mm
Void/Hall/Garage	Timber Above Plasterboard 19mm	1.90		Bulk Insulation R3	80/20 Carpet 10mm/Ceramic
Void/Hall/Laundry	Timber Above Plasterboard 19mm	2.10		No Insulation	80/20 Carpet 10mm/Ceramic

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Void/Hall/Entry	Timber Above Plasterboard 19mm	25.90		No Insulation	80/20 Carpet 10mm/Ceramic
Void/Hall/Guest	Timber Above Plasterboard 19mm	8.40		No Insulation	80/20 Carpet 10mm/Ceramic
Void/Hall/Powder	Timber Above Plasterboard 19mm	2.20		No Insulation	80/20 Carpet 10mm/Ceramic
Void/Hall/Prep	Timber Above Plasterboard 19mm	0.50		No Insulation	80/20 Carpet 10mm/Ceramic
Void/Hall/Kit/Liv/Din	Timber Above Plasterboard 19mm	10.90		No Insulation	80/20 Carpet 10mm/Ceramic
Void/Hall	Suspended Timber Floor 19mm	1.30	Totally Open	Bulk Insulation, Gap to Floor R3	80/20 Carpet 10mm/Ceramic

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	No insulation	No
Garage	Timber Above Plasterboard	Bulk Insulation R3	No
Mud	Timber Above Plasterboard	No Insulation	No
Laundry	Timber Above Plasterboard	No Insulation	No
Entry	Timber Above Plasterboard	No Insulation	No
Guest	Timber Above Plasterboard	No Insulation	No
Powder	Timber Above Plasterboard	No Insulation	No
Prep	Plasterboard	Bulk Insulation R4	No
Prep	Timber Above Plasterboard	No Insulation	No
Kit/Liv/Din	Plasterboard	Bulk Insulation R4	No
Kit/Liv/Din	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Bedroom 4	Plasterboard	Bulk Insulation R4	No
Bedroom 5	Plasterboard	Bulk Insulation R4	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bath	Plasterboard	Bulk Insulation R4	No
WC	Plasterboard	Bulk Insulation R4	No
Void/Hall	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Mud	2	Downlights - LED	150	Sealed
Laundry	2	Downlights - LED	150	Sealed
Entry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Guest	4	Downlights - LED	150	Sealed
Powder	2	Downlights - LED	150	Sealed
Powder	1	Exhaust Fans	300	Sealed
Prep	2	Downlights - LED	150	Sealed
Kit/Liv/Din	15	Downlights - LED	150	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
Bedroom 4	4	Downlights - LED	150	Sealed
Bedroom 5	4	Downlights - LED	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
Ensuite	2	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Void/Hall	8	Downlights - LED	150	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, Anti-glare Up 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

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).