Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007709454-01

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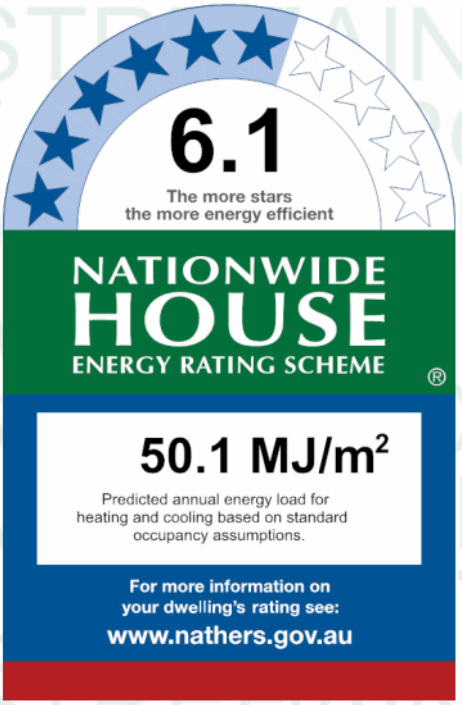

Property

Address	Unit Lot B-Main Dw, 22 Nicoll Street , Roselands , NSW , 2196
Lot/DP	9/4494
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*	180.0	Suburban
Unconditioned*	38.0	**NatHERS climate zone**
Total	218.0	56
Garage	28.0	

Thermal performance

Heating	Cooling
37.8 MJ/m^2	12.3 MJ/m^2

Accredited assessor

Name	Zoran Cvetkovski
Business name	Sustainability-Z
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Accreditation No.	DMN/13/1641
Assessor Accrediting Organisation	
Design Matters National	
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=vNuPfBPoH.
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? 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. 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.

Rated with AWS windows.

All wet areas windows are rated as generic windows.

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

insulation as the ceiling insulation.

Where the roof is extended over an open area such as a 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-002-03 A	ALM-002-03 A Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59

* Refer to glossary.

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
TIM-002-01 W	TIM-002-01 W Timber B SG Clear	5.4	0.63	0.60	0.66

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-001-19 A	AWS-001-19 A 502/504 Al Sliding Window SG 638CP	4.5	0.59	0.56	0.62
AWS-013-03 A	AWS-013-03 A 541/542 Al Sliding Door DG 4/10Ar/4ET	3.2	0.57	0.54	0.60
AWS-066-08 A	AWS-066-08 A RES SERIES 516 FIXED WINDOW SG 5mmEnTech	4.0	0.64	0.61	0.67
AWS-008-03 A	AWS-008-03 A 516 Al Awining Window DG 4/10Ar/4ET	3.6	0.52	0.49	0.55
AWS-067-07 A	AWS-067-07 A RES SERIES 516 FIXED WINDOW DG 4mmClr-10Ar-4mmEnTech	2.4	0.64	0.61	0.67
AWS-016-05 A	AWS-016-05 A 548 BF Al BiFold Door SG 6.38Sct	4.6	0.47	0.45	0.49
AWS-007-06 A	AWS-007-06 A 516 Al Awining Window SG 6.38Sct	4.9	0.53	0.50	0.56

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bath-GF	ALM-002-03 A	n/a	600	1540	n/a	45	SE	No
Bed 1-GF	AWS-001-19 A	n/a	600	2050	n/a	45	SE	No
Ktch/Din/Liv	AWS-013-03 A	n/a	2400	2700	n/a	45	NW	No
Ktch/Din/Liv	AWS-013-03 A	n/a	2400	2700	n/a	45	NE	No
Ktch/Din/Liv	AWS-013-03 A	n/a	2400	2700	n/a	45	NE	No
Ktch/Din/Liv	AWS-066-08 A	n/a	550	2500	n/a	00	SE	No
Entry/Hall-GF	TIM-001-01 W	n/a	2184	1000	n/a	90	SW	No
Entry/Hall-GF	TIM-002-01 W	n/a	2184	400	n/a	00	SW	No
Entry/Hall-GF	AWS-008-03 A	n/a	1800	970	n/a	90	SW	No
Entry/Hall-GF	AWS-067-07 A	n/a	1800	1280	n/a	00	NE	No
Master Bed-FF	AWS-016-05 A	n/a	2100	2700	n/a	90	SW	No
ENS/M.Bed-FF	ALM-002-03 A	n/a	600	1540	n/a	10	SE	No
Bed 2-FF	AWS-007-06 A	n/a	1800	970	n/a	60	SE	No
Bed 2-FF	AWS-007-06 A	n/a	1800	970	n/a	60	SE	No
Bed 3-FF	AWS-007-06 A	n/a	1800	970	n/a	60	SE	No
Bed 3-FF	AWS-007-06 A	n/a	1800	970	n/a	60	SE	No
Bed 3-FF	AWS-007-06 A	n/a	1800	970	n/a	60	SE	No
Bed 4-FF	AWS-007-06 A	n/a	1800	970	n/a	60	NW	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 4-FF	AWS-007-06 A	n/a	1800	970	n/a	60	NW	No
Stairs/Hall-FF	AWS-008-03 A	n/a	1800	970	n/a	90	SW	No
Stairs/Hall-FF	AWS-008-03 A	n/a	1800	970	n/a	90	SW	No
Stairs/Hall-FF	AWS-067-07 A	n/a	1800	1280	n/a	00	NE	No
Stairs/Hall-FF	AWS-007-06 A	n/a	1800	970	n/a	60	NW	No
Stairs/Hall-FF	AWS-007-06 A	n/a	1800	970	n/a	60	NW	No
Stairs/Hall-FF	AWS-007-06 A	n/a	1800	970	n/a	60	NW	No
Void-Din/Liv	AWS-008-03 A	n/a	1800	970	n/a	90	NE	No
Void-Din/Liv	AWS-008-03 A	n/a	1800	970	n/a	90	NE	No
Void-Din/Liv	AWS-008-03 A	n/a	1800	970	n/a	90	NE	No
Void-Din/Liv	AWS-008-03 A	n/a	1800	970	n/a	90	NE	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								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	2700	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Foil Sided Bubble Wrap, Anti-glare one side	No
EW-2	Cavity Brick	0.50	Medium	No insulation	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-1	3620	7345	SE	100	YES
Garage	EW-2	3620	3900	SW	100	NO
Garage	EW-1	3620	3000	NW	3400	YES
Bath-GF	EW-1	2440	700	NE	100	YES
Bath-GF	EW-1	2440	2700	SE	100	NO
Bath-GF	EW-1	2440	500	SW	100	YES
Bed 1-GF	EW-1	2440	3190	SE	100	YES
Ktch/Din/Liv	EW-1	2440	8645	NW	100	NO
Ktch/Din/Liv	EW-1	2440	6100	NE	2900	NO
Ktch/Din/Liv	EW-1	2440	8400	SE	100	NO
Ktch/Din/Liv	EW-1	2440	900	SW	100	YES
Entry/Hall-GF	EW-1	3100	3045	SW	1900	YES
Entry/Hall-GF	EW-1	3100	800	NW	7500	NO
Entry/Hall-GF	EW-1	2440	1600	NE	100	YES
Entry/Hall-GF	EW-1	2440	3045	NW	100	YES
Master Bed-FF	EW-1	2440	3900	SW	100	NO
Master Bed-FF	EW-1	2440	1700	NW	100	YES
Master Bed-FF	EW-1	2440	3645	SE	100	NO
WIR/M.Bed-FF	EW-1	2440	2290	SE	100	YES
ENS/M.Bed-FF	EW-1	2440	700	NE	100	YES
ENS/M.Bed-FF	EW-1	2440	2700	SE	100	NO
ENS/M.Bed-FF	EW-1	2440	500	SW	100	YES
Bed 2-FF	EW-1	2440	3190	SE	100	YES
Bed 3-FF	EW-1	2440	4745	SE	100	NO
Bed 3-FF	EW-1	2440	900	SW	100	YES
Bed 4-FF	EW-1	2440	3590	NW	100	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs/Hall-FF	EW-1	2440	3045	SW	100	YES
Stairs/Hall-FF	EW-1	2440	900	NW	100	NO
Stairs/Hall-FF	EW-1	2440	1600	NE	1300	YES
Stairs/Hall-FF	EW-1	2440	4445	NW	100	YES
Void-Din/Liv	EW-1	2440	3545	NW	100	NO
Void-Din/Liv	EW-1	2440	6100	NE	100	NO
Void-Din/Liv	EW-1	2440	3545	SE	100	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Single Skin Brick		20.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Single Skin Brick		146.00	No insulation
IW-3 - Cavity brick		30.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	28.40	None	No Insulation	Bare
Bath-GF	Concrete Slab on Ground 100mm	4.90	None	No Insulation	Ceramic Tiles 8mm
Laundry-GF	Concrete Slab on Ground 100mm	6.20	None	No Insulation	Ceramic Tiles 8mm
Bed 1-GF	Concrete Slab on Ground 100mm	11.60	None	No Insulation	Cork Tiles or Parquetry 8mm
Ktch/Din/Liv	Concrete Slab on Ground 100mm	51.40	None	No Insulation	Ceramic Tiles 8mm
Entry/Hall-GF	Concrete Slab on Ground 100mm	25.70	None	No Insulation	Ceramic Tiles 8mm
Master Bed-FF/Garage	Concrete Above Plasterboard 150mm	14.10		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
WIR/M.Bed-FF/Garage	Concrete Above Plasterboard 150mm	8.80		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
ENS/M.Bed-FF/Bath-GF	Concrete Above Plasterboard 150mm	4.90		No Insulation	Ceramic Tiles 8mm
Bath-FF/Laundry-GF	Concrete Above Plasterboard 150mm	6.20		No Insulation	Ceramic Tiles 8mm
Bed 2-FF/Bed 1-GF	Concrete Above Plasterboard 150mm	11.60		No Insulation	Cork Tiles or Parquetry 8mm
Bed 3-FF/Ktch/Din/Liv	Concrete Above Plasterboard 150mm	15.40		No Insulation	Cork Tiles or Parquetry 8mm
Bed 4-FF/Ktch/Din/Liv	Concrete Above Plasterboard 150mm	10.90		No Insulation	Cork Tiles or Parquetry 8mm
Stairs/Hall-FF/Ktch/Din/Liv	Concrete Above Plasterboard 150mm	2.00		No Insulation	Cork Tiles or Parquetry 8mm
Stairs/Hall-FF/Entry/Hall-GF	Concrete Above Plasterboard 150mm	25.70		No Insulation	Cork Tiles or Parquetry 8mm
Void-Din/Liv/Ktch/Din/Liv	Concrete Above Plasterboard 150mm	21.60		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Concrete, Plasterboard	Bulk Insulation R2.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Bath-GF	Concrete Above Plasterboard	No Insulation	No
Laundry-GF	Concrete Above Plasterboard	No Insulation	No
Bed 1-GF	Concrete Above Plasterboard	No Insulation	No
Ktch/Din/Liv	Concrete Above Plasterboard	No Insulation	No
Entry/Hall-GF	Concrete Above Plasterboard	No Insulation	No
Master Bed-FF	Concrete, Plasterboard	Bulk Insulation R5	No
WIR/M.Bed-FF	Concrete, Plasterboard	Bulk Insulation R5	No
ENS/M.Bed-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Bath-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Bed 2-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Bed 3-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Bed 4-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Stairs/Hall-FF	Concrete, Plasterboard	Bulk Insulation R5	No
Void-Din/Liv	Concrete, Plasterboard	Bulk Insulation R5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bath-GF	1	Downlights - LED	50	Sealed
Laundry-GF	1	Downlights - LED	50	Sealed
Laundry-GF	1	Exhaust Fans	300	Sealed
Bed 1-GF	3	Downlights - LED	50	Sealed
Ktch/Din/Liv	13	Downlights - LED	50	Sealed
Ktch/Din/Liv	1	Exhaust Fans	300	Sealed
Entry/Hall-GF	6	Downlights - LED	50	Sealed
Master Bed-FF	3	Downlights - LED	50	Sealed
WIR/M.Bed-FF	2	Downlights - LED	50	Sealed
ENS/M.Bed-FF	1	Downlights - LED	50	Sealed
Bath-FF	1	Downlights - LED	50	Sealed
Bed 2-FF	3	Downlights - LED	50	Sealed
Bed 3-FF	4	Downlights - LED	50	Sealed
Bed 4-FF	3	Downlights - LED	50	Sealed
Stairs/Hall-FF	7	Downlights - LED	50	Sealed
Void-Din/Liv	5	Downlights - LED	50	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	0.50	Medium
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	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).