Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006734321

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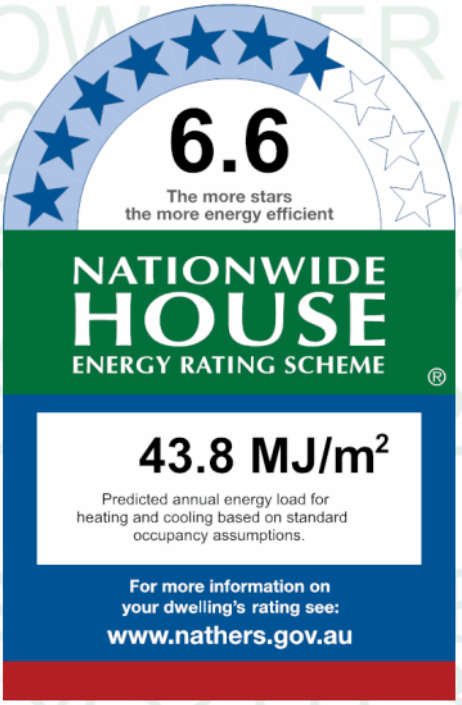

Property

Address	Unit 2A, 2 Meager Avenue , Padstow , NSW , 2211
Lot/DP	134/132272
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*	200.0	Suburban
Unconditioned*	32.0	**NatHERS climate zone**
Total	232.0	56
Garage	19.0	

Thermal performance

Heating	Cooling
26.2	**17.5**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Zoran Cvetkovski
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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=VvDRdZfcl.
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

Rated with provisional values for downlights
Rated with DOWELL windows.
Rated with provisional colours

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-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.3	0.53	0.50	0.56

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
DOW-022-01 B	DOW-022-01 B TB Aluminium Sliding Window DG 4Clr/12Ar/4ET	2.2	0.60	0.57	0.63
DOW-023-01 B	DOW-023-01 B TB Al Fixed-DG with TPS Spacer 4Clr/12Ar/4ET	1.8	0.60	0.57	0.63
DOW-025-01 B	DOW-025-01 B TB Aluminium Sliding Door DG 5Clr/12Ar/5ET	2.0	0.56	0.53	0.59
DOW-021-01 B	DOW-021-01 B Thermally Broken Aluminium Awning Window DG 4Clr/12Ar/4LE	2.0	0.52	0.49	0.55

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Family-GF	DOW-022-01 B	n/a	2700	1840	n/a	30	SW	No
Laundry-GF	ALM-004-03 A	n/a	1800	450	n/a	45	SW	No
Ktch/Din/Loun	DOW-023-01 B	n/a	600	3000	n/a	00	SW	No
Ktch/Din/Loun	DOW-023-01 B	n/a	600	3000	n/a	00	SW	No
Ktch/Din/Loun	DOW-022-01 B	n/a	2700	3355	n/a	30	SW	No
Ktch/Din/Loun	DOW-025-01 B	n/a	2700	3890	n/a	45	NW	No
Bed 2-FF	DOW-022-01 B	n/a	700	2150	n/a	10	SW	No
Bed 2-FF	DOW-023-01 B	n/a	2400	2700	n/a	00	SE	No
Ens/Bed 2-FF	DOW-022-01 B	n/a	700	1190	n/a	10	SW	No
Bed 3-FF	DOW-022-01 B	n/a	700	2150	n/a	10	SW	No
Bath-FF	DOW-022-01 B	n/a	1700	2050	n/a	10	SW	No
Bed 4-FF	DOW-022-01 B	n/a	700	2150	n/a	10	SW	No
Ens/M.Bed-FF	DOW-021-01 B	n/a	2400	610	n/a	60	SW	No
Wir/M.Bed-FF	DOW-021-01 B	n/a	2400	610	n/a	60	SW	No
M.Bed-FF	DOW-022-01 B	n/a	700	3355	n/a	10	SW	No
M.Bed-FF	DOW-022-01 B	n/a	2400	1800	n/a	10	NW	No
M.Bed-FF	DOW-022-01 B	n/a	2400	1800	n/a	10	NW	No
Void-FF	DOW-023-01 B	n/a	2700	1990	n/a	00	SE	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
VEL-011-01 W	Glass	2.6	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
M.Bed-FF	VEL-011-01 W	n/a	0	2500	2500	SW	No	No
Stairs/Hwy-FF	VEL-011-01 W	n/a	0	2235	600	SW	No	No

* Refer to glossary.

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	2700	820	90	SW
Garage	2500	2700	90	SE
Laundry-GF	2700	820	90	SW
Entry/St-GF	3000	1600	90	SE

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	3500	6045	SW	100	NO
Garage	EW-1	3500	1600	NE	500	YES
Garage	EW-2	3500	3100	SE	400	NO
Family-GF	EW-1	3500	3545	SW	100	NO
Family-GF	EW-1	3500	700	NW	100	YES
Laundry-GF	EW-1	3500	1590	SW	100	YES
Wip-GF	EW-1	3500	1890	SW	100	NO
Ktch/Din/Loun	EW-1	3500	3845	SW	100	NO
Ktch/Din/Loun	EW-1	3500	200	NW	3500	YES
Ktch/Din/Loun	EW-1	3500	7100	SW	100	YES
Ktch/Din/Loun	EW-1	3500	4900	NW	5200	NO
Ktch/Din/Loun	EW-1	3500	4000	NE	4900	NO
Entry/St-GF	EW-1	3500	2645	SE	100	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 2-FF	EW-1	2700	3745	SW	500	NO
Bed 2-FF	EW-1	2700	800	NE	8700	YES
Bed 2-FF	EW-1	2700	3500	SE	1200	NO
Ens/Bed 2-FF	EW-1	2700	1190	SW	500	NO
Bed 3-FF	EW-1	2700	3745	SW	500	NO
Bed 3-FF	EW-1	2700	700	NW	11100	YES
Bath-FF	EW-1	2700	3390	SW	500	YES
Bed 4-FF	EW-1	2700	3590	SW	500	NO
Ens/M.Bed-FF	EW-1	2700	1590	SW	500	NO
Wir/M.Bed-FF	EW-1	2700	2045	SW	500	NO
Wir/M.Bed-FF	EW-1	2700	200	NW	100	YES
M.Bed-FF	EW-1	2700	4545	SW	100	YES
M.Bed-FF	EW-1	2700	4900	NW	600	NO
M.Bed-FF	EW-1	2700	4000	NE	200	NO
Void-FF	EW-1	2700	2245	SE	2000	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Single Skin Brick		29.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Single Skin Brick		221.00	No insulation
IW-3 - Cavity brick, plasterboard		119.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	18.90	None	No Insulation	Bare
Family-GF	Concrete Slab on Ground 100mm	12.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Laundry-GF	Concrete Slab on Ground 100mm	4.40	None	No Insulation	Ceramic Tiles 8mm
Wip-GF	Concrete Slab on Ground 100mm	5.70	None	No Insulation	Ceramic Tiles 8mm
Ktch/Din/Loun	Concrete Slab on Ground 100mm	52.00	None	No Insulation	60/40 Carpet 10mm/Ceramic
Pwdr-GF	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Ceramic Tiles 8mm
Entry/St-GF	Concrete Slab on Ground 100mm	26.30	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 2-FF/Garage	Concrete Above Plasterboard 150mm	11.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bed 2-FF/Entry/St-GF	Concrete Above Plasterboard 150mm	1.20		No Insulation	Carpet+Rubber Underlay 18mm
Ens/Bed 2-FF/Garage	Concrete Above Plasterboard 150mm	4.00		Bulk Insulation R2.5	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 3-FF/Garage	Concrete Above Plasterboard 150mm	0.70		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bed 3-FF/Family-GF	Concrete Above Plasterboard 150mm	12.10		No Insulation	Carpet+Rubber Underlay 18mm
Bath-FF/Laundry-GF	Concrete Above Plasterboard 150mm	4.00		No Insulation	Ceramic Tiles 8mm
Bath-FF/Wip-GF	Concrete Above Plasterboard 150mm	4.30		No Insulation	Ceramic Tiles 8mm
Bed 4-FF/Wip-GF	Concrete Above Plasterboard 150mm	1.10		No Insulation	Carpet+Rubber Underlay 18mm
Bed 4-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	11.50		No Insulation	Carpet+Rubber Underlay 18mm
Bed 4-FF/Entry/St-GF	Concrete Above Plasterboard 150mm	0.90		No Insulation	Carpet+Rubber Underlay 18mm
Ens/M.Bed-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	5.70		No Insulation	Ceramic Tiles 8mm
Wir/M.Bed-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	7.10		No Insulation	Carpet+Rubber Underlay 18mm
M.Bed-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	17.90		No Insulation	Carpet+Rubber Underlay 18mm
M.Bed-FF	Suspended Concrete Slab 150mm	4.40	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
M.Bed-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	4.60		No Insulation	Carpet+Rubber Underlay 18mm
Void-FF/Entry/St-GF	Concrete Above Plasterboard 150mm	6.80		No Insulation	Carpet+Rubber Underlay 18mm
Stairs/Hwy-FF/Wip-GF	Concrete Above Plasterboard 150mm	0.50		No Insulation	Carpet+Rubber Underlay 18mm
Stairs/Hwy-FF/Ktch/Din/Loun	Concrete Above Plasterboard 150mm	3.30		No Insulation	Carpet+Rubber Underlay 18mm
Stairs/Hwy-FF/Pwdr-GF	Concrete Above Plasterboard 150mm	2.90		No Insulation	Carpet+Rubber Underlay 18mm
Stairs/Hwy-FF/Entry/St-GF	Concrete Above Plasterboard 150mm	17.10		No Insulation	Carpet+Rubber Underlay 18mm

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
Garage	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Family-GF	Concrete, Plasterboard	Bulk Insulation R4	No
Family-GF	Concrete Above Plasterboard	No Insulation	No
Laundry-GF	Concrete, Plasterboard	Bulk Insulation R4	No
Laundry-GF	Concrete Above Plasterboard	No Insulation	No
Wip-GF	Concrete, Plasterboard	Bulk Insulation R4	No
Wip-GF	Concrete Above Plasterboard	No Insulation	No
Ktch/Din/Loun	Concrete Above Plasterboard	No Insulation	No
Pwdr-GF	Concrete, Plasterboard	Bulk Insulation R4	No
Pwdr-GF	Concrete Above Plasterboard	No Insulation	No
Entry/St-GF	Concrete, Plasterboard	Bulk Insulation R4	No
Entry/St-GF	Concrete Above Plasterboard	No Insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 2-FF	Plasterboard	Bulk Insulation R4	No
Ens/Bed 2-FF	Plasterboard	Bulk Insulation R4	No
Bed 3-FF	Plasterboard	Bulk Insulation R4	No
Bath-FF	Plasterboard	Bulk Insulation R4	No
Bed 4-FF	Plasterboard	Bulk Insulation R4	No
Ens/M.Bed-FF	Plasterboard	Bulk Insulation R4	No
Wir/M.Bed-FF	Plasterboard	Bulk Insulation R4	No
M.Bed-FF	Plasterboard	Bulk Insulation R4	No
M.Bed-FF	Plasterboard	Bulk Insulation R4	No
Void-FF	Plasterboard	Bulk Insulation R4	No
Stairs/Hwy-FF	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Family-GF	3	Downlights - LED	50	Sealed
Laundry-GF	1	Downlights - LED	50	Sealed
Wip-GF	2	Downlights - LED	50	Sealed
Ktch/Din/Loun	13	Downlights - LED	50	Sealed
Ktch/Din/Loun	1	Exhaust Fans	300	Sealed
Pwdr-GF	1	Downlights - LED	50	Sealed
Pwdr-GF	1	Exhaust Fans	300	Sealed
Entry/St-GF	7	Downlights - LED	50	Sealed
Bed 2-FF	3	Downlights - LED	50	Sealed
Ens/Bed 2-FF	1	Downlights - LED	50	Sealed
Bed 3-FF	3	Downlights - LED	50	Sealed
Bath-FF	2	Downlights - LED	50	Sealed
Bed 4-FF	3	Downlights - LED	50	Sealed
Ens/M.Bed-FF	2	Downlights - LED	50	Sealed
Wir/M.Bed-FF	2	Downlights - LED	50	Sealed
M.Bed-FF	6	Downlights - LED	50	Sealed
M.Bed-FF	1	Downlights - LED	50	Sealed
Void-FF	2	Downlights - LED	50	Sealed
Stairs/Hwy-FF	6	Downlights - LED	50	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

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	0.50	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).