Nationwide House Energy Rating Scheme
NatHERS Certificate No. #HR-YFSE84-02

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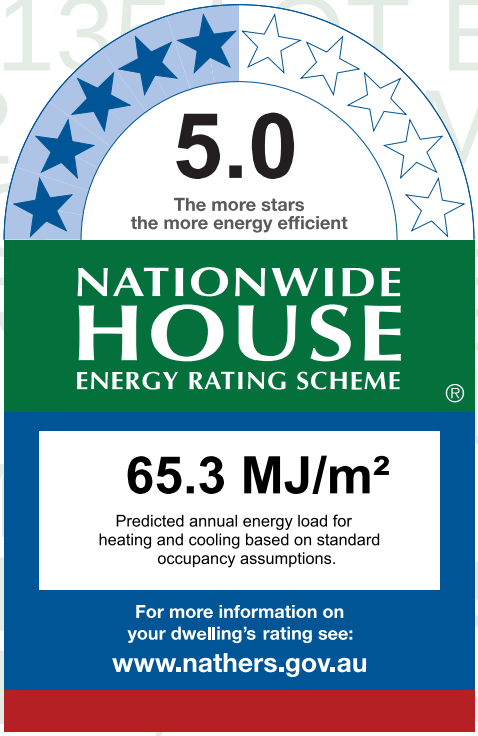

Property

Address	68 Redmyre Rd, Strathfield, NSW, 2135
Lot/DP	Lot B of Lot 1 DP920577
NCC Class*	1a
Type	New

Plans

Main Plan	Rev A Issue 5 / 8/11/2021
Prepared by	Design Tribe Projects

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	205.7	Suburban
Unconditioned*	18.0	**NatHERS climate zone**
Total	261.5	56 - Mascot AMO
Garage	37.8	

Accredited assessor

Name	John Caley
Business name	Ecological Design
Email	john@ecologicaldesign.com.au
Phone	+61 418262706
Accreditation No.	20570
Assessor Accrediting Organisation	ABSA
Declaration of interest	Conflict of Interest (Managed)

Thermal Performance

Heating	Cooling
39.5	**25.8**
MJ/m²	MJ/m²

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 http://www.hero-software.com.au/pdf/HR-YFSE84-02. When using either link, ensure you are visiting http://www.hero-software.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.

STRATHFIELD COUNCIL
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DATE 19 November 2021

* 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

The Assessor has provided design advice to the client

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-005-03 A	Aluminium A DG Argon Fill High Solar Gain low-E -Clear	4.10	0.47	0.45	0.49
ALM-006-03 A	Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.10	0.52	0.49	0.55

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bathroom	ALM-005-03 A	W49	1850	2050	Casement	90	N	External Louver (SC 0.30)
Bedroom_02	ALM-006-03 A	GD15	2600	4000	Sliding	45	N	None
Bedroom_02	ALM-005-03 A	W51	600	3500	Awning	45	E	Awning (SC 0.20)
Bedroom_03	ALM-006-03 A	GD14	2600	3500	Sliding	45	N	None
Bedroom_04	ALM-006-03 A	GD13	2600	3500	Sliding	60	N	External Louver (SC 0.30)
Ens_02	ALM-005-03 A	W50	1850	1850	Casement	90	N	External Louver (SC 0.30)
Entry	ALM-005-03 A	W33	3000	1500	Casement	45	W	None
Entry	ALM-005-03 A	GD06	3000	2100	Casement	45	S	None
Hall_first	ALM-005-03 A	W44	2600	730	Casement	65	W	None
Hall_first	ALM-005-03 A	W46	2600	900	Casement	65	S	None
Hall_first	ALM-005-03 A	W42	2600	3790	Casement	65	S	None
Hall_first	ALM-005-03 A	W45	2600	2100	Casement	60	S	None
Kitchen/Dining/Lounge	ALM-006-03 A	GD10	3000	3800	Sliding	60	N	None
Kitchen/Dining/Lounge	ALM-006-03 A	W38	2990	2230	Fixed	0	E	None
Kitchen/Dining/Lounge	ALM-005-03 A	GD11	3000	2860	Bi-fold	90	N	None
Kitchen/Dining/Lounge	ALM-005-03 A	GD12	3000	4800	Bi-fold	90	N	None
Kitchen/Dining/Lounge	ALM-006-03 A	W39	2990	900	Fixed	0	E	Awning (SC 0.20)
Kitchen/Dining/Lounge	ALM-006-03 A	W40	2990	900	Fixed	0	E	Awning (SC 0.20)
Kitchen/Dining/Lounge	ALM-006-03 A	W34	3000	2000	Fixed	0	S	None
Laundry	ALM-005-03 A	GD09	3000	900	Pivot	90	W	Awning (SC 0.20)
Master Bedroom	ALM-005-03 A	W32	800	3500	Awning	30	W	External Louver (SC 0.30)

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Master Bedroom	ALM-005-03 A	W41	2990	900	Casement	90	E	Awning (SC 0.20)
Master Bedroom	ALM-006-03 A	W31	3000	800	Fixed	0	S	External Louver (SC 0.30)
Powder	ALM-006-03 A	W35	2990	900	Fixed	0	W	Awning (SC 0.20)
Study	ALM-005-03 A	W36	2990	800	Casement	90	W	Awning (SC 0.20)
Study	ALM-005-03 A	W37	3000	1650	Casement	45	N	None
Study_nook	ALM-005-03 A	W48	2600	700	Casement	65	W	Awning (SC 0.20)
Study_nook	ALM-005-03 A	W52	2600	900	Casement	60	S	None
Study_nook	ALM-005-03 A	W47	2600	730	Casement	65	E	Awning (SC 0.20)
ens_master	ALM-005-03 A	W42	2990	1100	Casement	90	E	Awning (SC 0.20)
ens_master	ALM-005-03 A	W30	3000	2000	Casement	45	S	External Louver (SC 0.30)

Roof window *type and performance value*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2040	5810	90	S
Garage	2040	1063	90	N
Study_nook	2040	11	90	E
Study_nook	2040	36	90	E

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
FC-NONREFL-CAV	FC-NONREFL-CAV: Fibre-Cement Clad Battened (Non-Refl Cavity) Stud Wall	0.50	Medium	4.00	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	FC-NONREFL-CAV	2600	2062	N	594	Yes
Bedroom_02	FC-NONREFL-CAV	2600	2393	S		Yes
Bedroom_02	FC-NONREFL-CAV	2600	4001	N	594	Yes
Bedroom_02	FC-NONREFL-CAV	2600	6509	E		No
Bedroom_03	FC-NONREFL-CAV	2600	3521	N	594	Yes
Bedroom_04	FC-NONREFL-CAV	2600	4154	W		No
Bedroom_04	FC-NONREFL-CAV	2600	3529	N	594	Yes
Ens_02	FC-NONREFL-CAV	2600	1853	N	594	Yes
Entry	FC-NONREFL-CAV	3000	2627	W		Yes
Entry	FC-NONREFL-CAV	3000	3346	S		Yes
Garage	FC-NONREFL-CAV	3000	6003	S		Yes

* Refer to glossary.

		(mm)	(mm)	ation	projection (mm)	feature
Garage	FC-NONREFL-CAV	3000	6298	W		Yes
Garage	FC-NONREFL-CAV	3000	1376	N		Yes
Garage	FC-NONREFL-CAV	3000	6298	E		Yes
Hall_first	FC-NONREFL-CAV	2600	1007	W		Yes
Hall_first	FC-NONREFL-CAV	2600	4127	S		Yes
Hall_first	FC-NONREFL-CAV	2600	6118	S		Yes
Hall_first	FC-NONREFL-CAV	2600	71	W		Yes
Kitchen/Dining/Lounge	FC-NONREFL-CAV	3000	3807	N	453	Yes
Kitchen/Dining/Lounge	FC-NONREFL-CAV	3000	2509	E	9445	Yes
Kitchen/Dining/Lounge	FC-NONREFL-CAV	3000	9414	N	2538	Yes
Kitchen/Dining/Lounge	FC-NONREFL-CAV	3000	5747	E		No
Kitchen/Dining/Lounge	FC-NONREFL-CAV	3000	2954	S		Yes
Laundry	FC-NONREFL-CAV	3000	2541	W		Yes
Master Bedroom	FC-NONREFL-CAV	3000	3869	W		Yes
Master Bedroom	FC-NONREFL-CAV	3000	1507	E		No
Master Bedroom	FC-NONREFL-CAV	3000	3169	S		Yes
Powder	FC-NONREFL-CAV	3000	2450	W		Yes
Study	FC-NONREFL-CAV	3000	1898	W		Yes
Study	FC-NONREFL-CAV	3000	2920	N	453	Yes
Study_nook	FC-NONREFL-CAV	2600	2267	W		No
Study_nook	FC-NONREFL-CAV	2600	2331	S		Yes
Study_nook	FC-NONREFL-CAV	2600	1078	E		Yes
ens_master	FC-NONREFL-CAV	3000	3869	E		No
ens_master	FC-NONREFL-CAV	3000	2027	S		Yes

* Refer to glossary.

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	165.0	0.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	6.4	N/A	0.15	Tile
Bathroom	TIMB-002: Suspended Timber Floor - Lined Below	1.6	N/A	2.50	Tile
Bedroom_02	TIMB-001: Suspended Timber Floor	21.2	N/A	0.15	Timber
Bedroom_02	TIMB-002: Suspended Timber Floor - Lined Below	3.0	N/A	2.50	Timber
Bedroom_03	TIMB-001: Suspended Timber Floor	13.7	N/A	0.15	Timber
Bedroom_03	TIMB-002: Suspended Timber Floor - Lined Below	0.9	N/A	2.50	Timber
Bedroom_04	TIMB-001: Suspended Timber Floor	14.7	N/A	0.15	Timber
Ens_02	TIMB-001: Suspended Timber Floor	5.4	N/A	0.15	Tile
Ens_02	TIMB-002: Suspended Timber Floor - Lined Below	1.4	N/A	2.50	Tile
Entry	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	10.8	Enclosed (Disc.)	1.00	Tile
Garage	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	37.8	Enclosed (Disc.)	1.00	Exposed
Hall_first	TIMB-001: Suspended Timber Floor	18.4	N/A	0.15	Timber
Kitchen/Dining/Lounge	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	80.5	Enclosed (Disc.)	1.00	Timber
Laundry	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	5.9	Enclosed (Disc.)	1.00	Tile
Master Bedroom	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	19.0	Enclosed (Disc.)	1.00	Timber
Powder	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	4.1	Enclosed (Disc.)	1.00	Tile
Study	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	5.5	Enclosed (Disc.)	1.00	Timber
Study_nook	TIMB-001: Suspended Timber Floor	5.3	N/A	0.15	Timber
ens_master	SUSP-CONC-100: Suspended Concrete Slab Floor (100mm)	7.8	Enclosed (Disc.)	1.00	Tile

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes

* Refer to glossary.

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom_02	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Bedroom_03	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Bedroom_04	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Ens_02	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Entry	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Garage	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Hall_first	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Kitchen/Dining/Lounge	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Laundry	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Master Bedroom	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Powder	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Study	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
Study_nook	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes
ens_master	FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	4.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom_02	8	Downlight	200	Sealed
Bedroom_03	4	Downlight	200	Sealed
Bedroom_04	4	Downlight	200	Sealed
Ens_02	2	Downlight	200	Sealed
Ens_02	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Garage	6	Downlight	200	Sealed
Hall_first	6	Downlight	200	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Dining/Lounge	30	Downlight	200	Sealed
Kitchen/Dining/Lounge	1	Exhaust Fan	350	Sealed
Laundry	2	Downlight	200	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Master Bedroom	6	Downlight	200	Sealed
Powder	1	Downlight	200	Sealed
Powder	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed
Study_nook	2	Downlight	200	Sealed
ens_master	2	Downlight	200	Sealed
ens_master	1	Exhaust Fan	350	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Bedroom_02	1	1200
Bedroom_03	1	1200
Bedroom_04	1	1200
Kitchen/Dining/Lounge	2	1200
Master Bedroom	1	1200
Study	1	1200
Study_nook	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	1.30	0.85	Dark
FLAT-01: Flat Framed / Skillion Metal Roof + Flat Ceiling	1.30	0.50	Medium

* Refer to glossary.

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).

* Refer to glossary.