Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008833444

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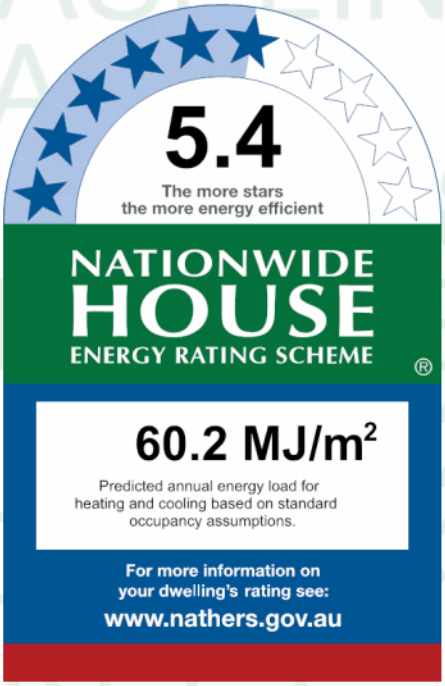

Property

Address	98 Chaseling Street , Greenacre , NSW , 2190
Lot/DP	367/11603
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	13923
Prepared by	Dwell Designs

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	276.0
Unconditioned*	128.0
Total	404.0
Garage	120.0

Exposure type
Suburban

NatHERS climate zone
56

Thermal performance

Heating	Cooling
47.4 MJ/m^2	12.8 MJ/m^2

Accredited assessor

Name	Noura Al Hazzouri
Business name	none
Email	noura.h@optusnet.com.au
Phone	0405600 600
Accreditation No.	DMN/18/1891
Assessor Accrediting Organisation	Design Matters National
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 hstar.com.au/QR/Generate?p=gBRqytqhX.
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.

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

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-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
entry	ALM-001-01 A	n/a	2000	1000	n/a	45	E	No
Guest Bedroom	ALM-001-01 A	n/a	600	1800	n/a	90	W	No
Guest Bedroom	ALM-001-01 A	n/a	1500	1000	n/a	45	N	No
Guest Bedroom	ALM-001-01 A	n/a	1500	1000	n/a	45	N	No
guest ens	ALM-001-01 A	n/a	600	1800	n/a	90	W	No
Kitchen/Living	ALM-002-01 A	n/a	600	2700	n/a	45	W	No
Kitchen/Living	ALM-001-01 A	n/a	2000	1000	n/a	45	E	No
Kitchen/Living	ALM-001-01 A	n/a	2000	1000	n/a	45	E	No
Kitchen/Living	ALM-001-01 A	n/a	2400	6000	n/a	90	S	No
Kitchen/Living	ALM-001-01 A	n/a	600	1500	n/a	90	E	No
Kitchen/Living	ALM-002-01 A	n/a	600	2700	n/a	45	S	No
formal lounge	ALM-001-01 A	n/a	2000	1000	n/a	45	N	No
formal lounge	ALM-001-01 A	n/a	2000	1000	n/a	45	N	No
formal lounge	ALM-001-01 A	n/a	2000	1000	n/a	45	E	No
formal lounge	ALM-001-01 A	n/a	2000	1000	n/a	45	E	No
Bedroom 1	ALM-001-01 A	n/a	600	1800	n/a	90	W	No
Bedroom 1	ALM-002-01 A	n/a	2100	2800	n/a	45	N	No
Bedroom 2	ALM-001-01 A	n/a	600	1800	n/a	90	W	No
bath	ALM-001-01 A	n/a	600	1800	n/a	90	W	No
ens	ALM-001-01 A	n/a	600	1800	n/a	90	S	No
Bedroom 3	ALM-002-01 A	n/a	2100	2800	n/a	45	S	No
retreat	ALM-001-01 A	n/a	2000	1000	n/a	90	E	No
retreat	ALM-001-01 A	n/a	2100	1000	n/a	45	S	No
retreat	ALM-001-01 A	n/a	2100	730	n/a	45	E	No
ens	ALM-001-01 A	n/a	600	1067	n/a	90	N	No
Master Bedroom	ALM-002-01 A	n/a	2100	2800	n/a	45	N	No
Master Bedroom	ALM-001-01 A	n/a	600	1800	n/a	90	E	No

Roof window *type and performance*

Default* roof windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges

* Refer to glossary.

Default* roof windows

Description	U-value*	Substitution tolerance ranges	
		SHGC lower limit	SHGC upper limit

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	2200	4800	90	N
Garage	2040	820	90	E
entry	2400	1900	90	N

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	No insulation	No
EW-2	Cavity Brick	0.50	Medium	Foil Sided Bubble Wrap, Anti-glare one side	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	2400	10800	W	0	NO
Garage	EW-1	2400	5400	N	0	YES
Garage	EW-1	2400	2695	W	0	YES
Garage	EW-1	2400	5045	N	0	YES
Garage	EW-1	2400	8950	E	0	NO
Garage	EW-1	2400	5300	S	0	YES
Garage	EW-1	2400	4950	E	0	YES
Garage	EW-1	2400	6500	S	0	NO
ldry	EW-1	2400	645	W	0	YES
ldry	EW-1	2400	1769	SW	5520	YES
ldry	EW-1	2400	2750	W	0	NO
ldry	EW-1	2400	2600	N	0	NO
ldry	EW-1	2400	4300	E	0	YES
entry	EW-2	2620	2745	N	0	YES
entry	EW-2	2620	2990	E	0	NO
Guest Bedroom	EW-2	2620	3395	W	0	NO
Guest Bedroom	EW-2	2620	4145	N	0	NO
guest ens	EW-2	2620	3040	W	0	NO
Kitchen/Living	EW-2	2620	7245	W	0	NO
Kitchen/Living	EW-2	2620	8595	E	0	NO
Kitchen/Living	EW-2	2620	7800	S	0	YES
Kitchen/Living	EW-2	2620	2150	E	0	YES
Kitchen/Living	EW-2	2620	3900	S	0	NO
formal lounge	EW-2	3400	4595	W	0	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
formal lounge	EW-1	3400	608	W	0	NO
formal lounge	EW-1	3400	447	NW	0	NO
formal lounge	EW-1	3400	640	NW	0	NO
formal lounge	EW-2	3400	696	N	0	NO
formal lounge	EW-2	3400	3250	N	0	NO
formal lounge	EW-2	3400	6245	E	0	NO
Bedroom 1	EW-2	2600	3345	W	300	NO
Bedroom 1	EW-2	2600	3800	N	250	NO
Bedroom 1	EW-2	2600	1400	E	200	YES
Bedroom 1	EW-2	2600	895	N	350	YES
Bedroom 2	EW-2	2600	3890	W	300	NO
bath	EW-2	2600	2440	W	300	NO
ens	EW-2	2600	3045	S	375	NO
ens	EW-2	2600	1645	W	300	NO
Bedroom 3	EW-2	2600	1400	W	350	YES
Bedroom 3	EW-2	2600	645	S	1900	YES
Bedroom 3	EW-2	2600	3045	E	350	NO
Bedroom 3	EW-2	2600	4150	S	500	NO
retreat	EW-2	2600	4395	E	400	NO
retreat	EW-2	2600	3750	S	400	YES
retreat	EW-2	2600	1095	E	350	YES
ens	EW-2	2600	2140	N	350	YES
Master Bedroom	EW-2	2600	1700	W	500	YES
Master Bedroom	EW-2	2600	354	W	530	NO
Master Bedroom	EW-2	2600	424	NW	354	NO
Master Bedroom	EW-2	2600	453	N	75	NO
Master Bedroom	EW-2	2600	3900	N	50	NO
Master Bedroom	EW-2	2600	3645	E	400	NO
Wir	EW-1	2600	1540	E	400	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Single Skin Brick		201.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Waffle pod slab 300 mm 100mm	120.50	None	Waffle Pod 300mm	Bare
ldry	Waffle pod slab 300 mm 100mm	10.30	None	Waffle Pod 300mm	Ceramic Tiles 8mm
entry/Garage	Concrete Above Plasterboard 100mm	23.20		No Insulation	Carpet 10mm
entry	Waffle pod slab 300 mm 100mm	3.60	None	Waffle Pod 300mm	Carpet 10mm
Guest Bedroom /Garage	Concrete Above Plasterboard 100mm	1.40		No Insulation	Carpet 10mm
Guest Bedroom	Waffle pod slab 300 mm 100mm	12.70	None	Waffle Pod 300mm	Ceramic Tiles 8mm
guest ens/Garage	Concrete Above Plasterboard 100mm	6.70		No Insulation	Ceramic Tiles 8mm
guest wc/Garage	Concrete Above Plasterboard 100mm	3.30		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Garage	Concrete Above Plasterboard 100mm	76.90		No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Waffle pod slab 300 mm 100mm	14.40	None	Waffle Pod 300mm	Carpet 10mm
formal lounge	Waffle pod slab 300 mm 100mm	28.70	None	Waffle Pod 300mm	Carpet 10mm
Bedroom 1	Suspended Concrete Slab 100mm	16.00	Open	No Insulation	Carpet 10mm
Bedroom 2/Guest Bedroom	Concrete Above Plasterboard 150mm	8.90		No Insulation	Carpet 10mm
Bedroom 2	Suspended Concrete Slab 150mm	3.00	Open	No Insulation	Carpet 10mm
bath/entry	Concrete Above Plasterboard 150mm	1.00		No Insulation	Ceramic Tiles 8mm
bath/Guest Bedroom	Concrete Above Plasterboard 150mm	1.30		No Insulation	Ceramic Tiles 8mm
bath/guest ens	Concrete Above Plasterboard 150mm	4.40		No Insulation	Ceramic Tiles 8mm
bath/guest wc	Concrete Above Plasterboard 150mm	0.70		No Insulation	Ceramic Tiles 8mm
ens /guest ens	Concrete Above Plasterboard 150mm	2.20		No Insulation	Ceramic Tiles 8mm
ens /guest wc	Concrete Above Plasterboard 150mm	0.80		No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
ens /Kitchen/Living	Concrete Above Plasterboard 150mm	1.90		No Insulation	Ceramic Tiles 8mm
Bedroom 3/guest wc	Concrete Above Plasterboard 150mm	1.10		No Insulation	Carpet 10mm
Bedroom 3/Kitchen/Living	Concrete Above Plasterboard 150mm	12.60		No Insulation	Carpet 10mm
retreat/entry	Concrete Above Plasterboard 150mm	25.80		No Insulation	Carpet 10mm
retreat/Guest Bedroom	Concrete Above Plasterboard 150mm	3.30		No Insulation	Carpet 10mm
retreat/guest wc	Concrete Above Plasterboard 150mm	0.90		No Insulation	Carpet 10mm
retreat/Kitchen/Living	Concrete Above Plasterboard 150mm	11.10		No Insulation	Carpet 10mm
ens/entry	Concrete Above Plasterboard 150mm	0.60		No Insulation	Ceramic Tiles 8mm
ens	Suspended Concrete Slab 150mm	6.30	Open	No Insulation	Ceramic Tiles 8mm
Master Bedroom /formal lounge	Concrete Above Plasterboard 150mm	18.60		No Insulation	Carpet 10mm
Wir/formal lounge	Concrete Above Plasterboard 150mm	5.50		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	Bulk Insulation R2	No
Garage	Concrete Above Plasterboard	No Insulation	No
ldry	Plasterboard	Bulk Insulation R2	No
entry	Concrete Above Plasterboard	No Insulation	No
Guest Bedroom	Concrete Above Plasterboard	No Insulation	No
guest ens	Concrete Above Plasterboard	No Insulation	No
guest wc	Concrete Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R2	No
Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
formal lounge	Plasterboard	Bulk Insulation R2	No
formal lounge	Concrete Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
bath	Plasterboard	Bulk Insulation R3.5	No
ens	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
retreat	Plasterboard	Bulk Insulation R3.5	No
ens	Plasterboard	Bulk Insulation R3.5	No
Master Bedroom	Plasterboard	Bulk Insulation R3.5	No
Wir	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
guest wc	1	Exhaust Fans	300	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 1	4	Downlights - LED	150	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
retreat	8	Downlights - LED	150	Sealed
Master Bedroom	4	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Concrete	No Insulation, Only an Air Gap	0.50	Medium
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

* 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).