

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. 0008602898-01

Generated on 01 Jun 2023 using BERS Pro v4.4.1.5 (3.21)

### Property

**Address** 48 Johnson Street , Freshwater , NSW , 2096  
**Lot/DP** 74/7310  
**NCC Class\*** 1A  
**Type** New Dwelling

### Plans

**Main plan** Battaglia 48 Johnson  
**Prepared by** AS

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>	<b>Exposure type</b>
Conditioned* 188.0	Suburban
Unconditioned* 45.0	<b>NatHERS climate zone</b>
Total 232.0	56
Garage 30.0	



### Accredited assessor

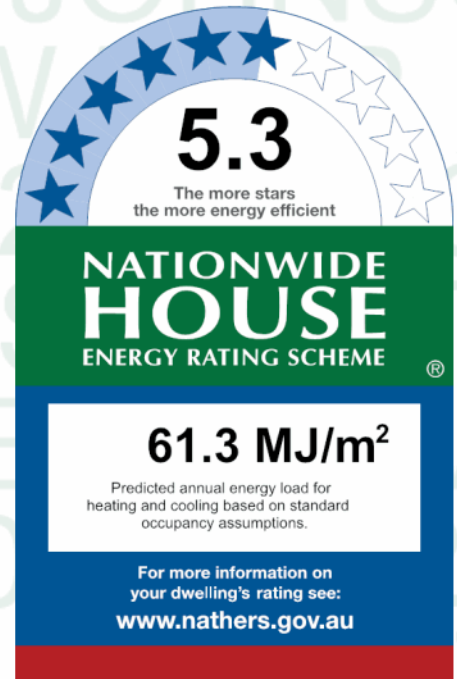
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**Accreditation No.** DMN/12/1441  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>39.9</b>	<b>21.4</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### 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=DAeLcdnfM](http://hstar.com.au/QR/Generate?p=DAeLcdnfM). When using either link, ensure you are visiting [hstar.com.au](http://hstar.com.au)



## 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

Where not noted on plans, default selections to floor coverings and external colours have

been used in this assessment, as noted in the NatHERS Technical Notes. Alternative

selections past this point can be made to floor coverings and external colours, without

requiring an amended certificate

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
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-006-01 A	WID-006-01 A AI Residential Sliding Window SG 3mm Clear	6.4	0.76	0.72	0.80

## Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-012-05 A	WID-012-05 A Aluminium Awning Window SG 6mmCS	6.2	0.57	0.54	0.60
WID-006-13 A	WID-006-13 A AI Residential Sliding Window SG 6CS_Clr	4.9	0.62	0.59	0.65
WID-005-20 A	WID-005-20 A AI Residential Internal Sliding Door DG 4/12/4ET	3.2	0.61	0.58	0.64
WID-012-04 A	WID-012-04 A Aluminium Awning Window SG 4mmClr	6.4	0.64	0.61	0.67
WID-005-13 A	WID-005-13 A AI Residential Internal Sliding Door SG 6CS_Clr	4.7	0.60	0.57	0.63

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Laundry	TIM-001-01 W	n/a	1000	820	n/a	90	E	No
Powder	WID-006-01 A	n/a	1030	610	n/a	45	E	No
Entry	WID-012-05 A	n/a	1800	850	n/a	60	W	No
Kitchen/Family	WID-012-05 A	n/a	600	3010	n/a	00	E	No
Kitchen/Family	WID-006-13 A	n/a	2100	2110	n/a	30	E	No
Kitchen/Family	WID-005-20 A	n/a	2100	5330	n/a	60	S	No
Kitchen/Family	WID-006-13 A	n/a	2100	1510	n/a	30	W	No
Kitchen/Family	WID-006-13 A	n/a	2100	1510	n/a	30	W	No
Music Room	WID-006-13 A	n/a	600	2650	n/a	40	W	No
Study	WID-006-13 A	n/a	1030	1510	n/a	45	W	No
WIR	WID-012-05 A	n/a	1500	610	n/a	90	N	No
Ensuite	WID-006-01 A	n/a	1030	1510	n/a	45	E	No
Sitting	WID-006-13 A	n/a	600	1810	n/a	45	E	No
Sitting	WID-012-05 A	n/a	2035	1510	n/a	00	E	No
Bed 2	WID-006-13 A	n/a	600	2170	n/a	10	E	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 2	WID-006-13 A	n/a	600	2170	n/a	10	S	No
Bed 3	WID-006-13 A	n/a	600	2170	n/a	10	S	No
Bed 3	WID-006-13 A	n/a	600	2170	n/a	10	W	No
WC	WID-006-01 A	n/a	1030	730	n/a	45	W	No
Bath	WID-012-04 A	n/a	1200	730	n/a	90	W	No
Bed 4	WID-006-13 A	n/a	600	2170	n/a	10	W	No
Void	WID-012-05 A	n/a	700	3010	n/a	00	W	No
Void	WID-012-05 A	n/a	1500	1210	n/a	00	N	No
Master Suite	WID-005-13 A	n/a	2140	1810	n/a	45	N	No
Master Suite	WID-012-05 A	n/a	1500	610	n/a	10	N	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2400	3850	90	N
Laundry	1340	820	90	E
Entry	2340	1200	90	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.85	Dark	No insulation	No
EW-2	Single Skin Brick	0.85	Dark	No insulation	No
EW-3	Brick Veneer	0.85	Dark	Bulk Insulation R2.5	No
EW-4	AAC cavity panel on battens	0.85	Dark	Bulk Insulation R2.5	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	2835	5500	E	100	NO
Garage	EW-1	2835	500	S	100	YES
Garage	EW-1	2835	1100	W	1900	YES
Garage	EW-2	2835	5600	N	1600	NO
Laundry	EW-3	2750	1790	E	100	YES
Powder	EW-3	2750	1690	E	100	NO
Entry	EW-3	2750	2290	E	100	NO
Entry	EW-3	2750	5595	W	100	NO
Entry	EW-3	2750	1795	N	2700	YES

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Butlers/Pantry	EW-3	2750	1690	E	100	NO
Kitchen/Family	EW-3	2750	4595	E	100	NO
Kitchen/Family	EW-3	2751	2200	E	600	NO
Kitchen/Family	EW-3	2750	6900	S	3600	NO
Kitchen/Family	EW-3	2751	2000	W	600	NO
Kitchen/Family	EW-3	2750	4795	W	100	NO
Music Room	EW-3	2750	3790	W	100	NO
Study	EW-3	2750	2490	W	100	NO
WIR	EW-4	2450	5295	E	600	NO
WIR	EW-4	2450	1395	N	2100	NO
Ensuite	EW-4	2450	3690	E	600	NO
Sitting	EW-4	2450	4790	E	600	NO
Bed 2	EW-4	2450	3695	E	600	NO
Bed 2	EW-4	2450	3395	S	600	NO
Bed 3	EW-4	2450	3495	S	600	NO
Bed 3	EW-4	2450	3695	W	600	NO
WC	EW-4	2450	1190	W	600	NO
Bath	EW-4	2450	2090	W	600	NO
Bed 4	EW-4	2450	3790	W	600	NO
Void	EW-4	2450	5595	W	600	NO
Void	EW-4	2450	1795	N	3200	YES
Master Suite	EW-4	2450	1100	W	2400	YES
Master Suite	EW-4	2450	3695	N	2100	NO

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
IW-1	Cavity wall, direct fix plasterboard, single gap	74.00	Bulk Insulation, No Air Gap R2
IW-2	Cavity wall, direct fix plasterboard, single gap	164.00	No insulation

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Waffle pod slab 175 mm 100mm	30.40	None	Waffle Pod 175mm	Bare
Laundry	Waffle pod slab 225 mm 100mm	4.40	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Powder	Waffle pod slab 225 mm 100mm	2.20	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Entry	Waffle pod slab 225 mm 100mm	28.00	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Butlers/Pantry	Waffle pod slab 225 mm 100mm	4.10	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Kitchen/Family	Waffle pod slab 225 mm 100mm	46.60	None	Waffle Pod 225mm	80/20 Carpet 10mm/Ceramic
Music Room	Waffle pod slab 225 mm 100mm	11.00	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Study	Waffle pod slab 225 mm 100mm	7.10	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
WIR/Garage	Timber Above Plasterboard 19mm	7.10		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Ensuite/Garage	Timber Above Plasterboard 19mm	0.50		Bulk Insulation R2	Ceramic Tiles 8mm
Ensuite/Laundry	Timber Above Plasterboard 19mm	4.50		No Insulation	Ceramic Tiles 8mm
Ensuite/Powder	Timber Above Plasterboard 19mm	2.30		No Insulation	Ceramic Tiles 8mm
Ensuite/Entry	Timber Above Plasterboard 19mm	2.30		No Insulation	Ceramic Tiles 8mm
Sitting/Entry	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet+Rubber Underlay 18mm
Sitting/Butlers/Pantry	Timber Above Plasterboard 19mm	4.30		No Insulation	Carpet+Rubber Underlay 18mm
Sitting/Kitchen/Family	Timber Above Plasterboard 19mm	3.90		No Insulation	Carpet+Rubber Underlay 18mm
Bed 2/Kitchen/Family	Timber Above Plasterboard 19mm	12.30		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3/Kitchen/Family	Timber Above Plasterboard 19mm	12.60		No Insulation	Carpet+Rubber Underlay 18mm
WC/Kitchen/Family	Timber Above Plasterboard 19mm	1.40		No Insulation	Ceramic Tiles 8mm
WC/Music Room	Timber Above Plasterboard 19mm	0.70		No Insulation	Ceramic Tiles 8mm
Bath/Music Room	Timber Above Plasterboard 19mm	5.90		No Insulation	Ceramic Tiles 8mm
Bed 4/Music Room	Timber Above Plasterboard 19mm	3.70		No Insulation	Carpet+Rubber Underlay 18mm
Bed 4/Study	Timber Above Plasterboard 19mm	7.20		No Insulation	Carpet+Rubber Underlay 18mm
Void/Entry	Timber Above Plasterboard 19mm	9.70		No Insulation	Carpet+Rubber Underlay 18mm



Location	Construction	Area Sub-floor (m <sup>2</sup> ) ventilation	Added insulation (R-value)	Covering
Master Suite/Garage	Timber Above Plasterboard 19mm	19.00	Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Hallway/Entry	Timber Above Plasterboard 19mm	3.80	No Insulation	Carpet+Rubber Underlay 18mm
WIL/Entry	Timber Above Plasterboard 19mm	1.20	No Insulation	Carpet+Rubber Underlay 18mm

## 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 R2	No
Laundry	Timber Above Plasterboard	No Insulation	No
Powder	Timber Above Plasterboard	No Insulation	No
Entry	Timber Above Plasterboard	No Insulation	No
Butlers/Pantry	Timber Above Plasterboard	No Insulation	No
Kitchen/Family	Plasterboard	Bulk Insulation R5	No
Kitchen/Family	Timber Above Plasterboard	No Insulation	No
Music Room	Timber Above Plasterboard	No Insulation	No
Study	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R5	No
Ensuite	Plasterboard	Bulk Insulation R5	No
Sitting	Plasterboard	Bulk Insulation R5	No
Bed 2	Plasterboard	Bulk Insulation R5	No
Bed 3	Plasterboard	Bulk Insulation R5	No
WC	Plasterboard	Bulk Insulation R5	No
Bath	Plasterboard	Bulk Insulation R5	No
Bed 4	Plasterboard	Bulk Insulation R5	No
Void	Plasterboard	Bulk Insulation R5	No
Master Suite	Plasterboard	Bulk Insulation R5	No
Hallway	Plasterboard	Bulk Insulation R5	No
WIL	Plasterboard	Bulk Insulation R5	No



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm <sup>2</sup> )	Sealed/unsealed
Powder	1	Exhaust Fans	0	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
WC	1	Exhaust Fans	300	Sealed
Bath	1	Exhaust Fans	300	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, No Air Gap Above R1.3	0.85	Dark
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	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.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	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.
<b>Exposure category – exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category – open</b>	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).
<b>Exposure category – suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category – protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	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 <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the operability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	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 <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (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.
<b>Roof window</b>	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.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	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.
<b>Skylight</b> (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.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	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).