

## ABCB NCC 2022 VOLUME TWO BASIX Thermal Comfort Energy Efficiency Assessment

Accredited Star Rating

7

REFERENCE

SITE ADDRESS Lot 14 (#14) Raven Circuit WARRIEWOOD 2102

> DWELLING TYPE Double Storey

COMMISSIONED BY GJ Gardner Homes

ASSESSMENT DATE 12/04/2025

Energy Advance Australia Pty. Ltd. NatHERS Accreditation Number: DMN/14/1662 34 Dellamarta Road WANGARA 6065 PO Box 1436 WANGARA DC 6947 ACN: 60 9332014 | 1300 850 228 energy@energyadvance.com.au 1300 850 228



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## **THE SUMMARY**

Address	Lot 14 (#14) Raven Circuit	WARRIEWOOD 2102	
Dwelling Type	Double Storey		Façade Facing
State	New South Wales		East
Site Exposure	Suburban	Garage	Side (viewed from the front)
Ground Floor Type	Concrete Slab-on-Ground		Left-Hand Side
NatHERS Climate Zone	56		Modelled Wall Colour
FirstRate 5 Engine:	Chenath Engine 3.22		Wall Colour: Medium
Certificate Number	3ZLP2RZQPZ		Modelled Roof Colour
Accredited Star Rating	7	Solar A	Absorptance: Dark roof colour
		Мс	delled Glazing Frame Colour
Conditioned Floor Area (m <sup>2</sup> )	117.20	G	lazing Frame Colour: Medium
Unconditioned Floor (m <sup>2</sup> )	9.00		
Total (m <sup>2</sup> )	126.20		
	Area (m2)	Allowance (W/m2)	Total Maximum Watts
Class 1 Total Area	141.47	5.0	707.4
Class 10a Total Area	19.55	3.0	58.7
Total Outdoor Areas	2.01	4.0	8.0
Maximum Ceiling	Maximum Allowance	Maximum Penetration (m2	)
Insulation Penetration	0.50%	0.71	
If approved fireproof downlight co designer or architect o	overs, which can be fully covered by ir r if IC4-rated downlights are installed	nsulation, are specified and noted on I, then there is no need to allow for t	the electrical plan by the building he ceiling penetration.
	ASSESSMENT CALCULATIO	NS & SOFTWARE RESULTS	
	Target (MJ/m².pa)	Proposed (MJ/m².pa)	Efficiency Benchmark

		Target (MJ/m².pa)	Proposed (MJ/m².pa)	Efficiency I	Benchmark
	Heating:	25.0	17.9	Pass:	33.1%
_	Cooling:	18.0	11.9	Pass:	40.8%
	Total:	43.0	29.8	•	





## THE ANALYSIS

# This dwelling exceeds minimum thermal comfort compliance targets by 30.7%

Cooling the main areas in this home each year uses as much energy as walking around the Earth 1.2 times, or watching Netflix continuously for approximately 0.4 years.





Heating the main areas in this home uses the same amount of energy every year as watching Netflix continuously for approximately 0.7 years, or walking around the Earth 1.8 times.

> Certificate No. # 3ZLP2RZQPZ Scan QR code or follow website link for rating deta

> > Claude-Francois So DMN/14/1662

2102, NSW, 2102

https://www.fr5.com.au/QRCodeLanding?Publiclo

Lot 14 (#14) Raven Circui WARRIEWOOD,

Assessor na

## Room-by-Room Energy Use Analysis

This graph shows the annual energy needed to heat and cool each room to a comfortable temperature.

The taller the bar means the room requires either more warmth to stay cozy during cold weather, or energy to remain cool when it's hot outside.

The line represents what would be considered good energy use for the size of each room. When bars rise above this line, it means the room is using more energy than expected, highlighting opportunities for energy-efficient improvements.

The goal is shorter bars, indicating your home is comfortably heated and cooled without excessive energy use. Rooms with the tallest bars are key areas to focus on for energy-saving upgrades.





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## THE ANALYSIS

## Understanding the Window Ratio

The ratio below shows the percentage of the dwelling's exterior that's made up of glass compared to the floor area. Ideally, a lower percentage contributes to better thermal efficiency, reducing energy loss and lowering energy bills.

This home's fairly high glazing-to-floor area ratio means that there is considerable heat loss, through the glass (conductance) in the colder months but also unwanted heat gain in the hot months. This results in high heating and cooling costs throughout the year. Considering size reductions could significantly improve energy efficiency and help manage costs more effectively.



## Top 8 Window to Floor Area Ratios per Room



## Mapping Out Glass: Orientation Analysis

The chart maps out the distribution of glass, showing their orientation around the house as percentages of the total floor area.

NORTH: Increase the proportion of minimally shaded glass facing north: between 10-15%

EAST: East-facing glass should be kept to under 8%.

**SOUTH:** South-facing glass should be reduced as much as possible; aiming for 5% or less.

WEST: Aim to limit glass on the west to less than 5% of the floor area to prevent excess heat gain.

These are guides to help enhance your home's thermal efficiency. For detailed shading strategies, refer to the floor plans.





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## THE SPECIFICATIONS

Walls			
CONSTRUCTION TYPE AND INSULATION	FRAME TYPE	LOCATION	THERMAL BREAK?
WDF   Framed   R2.5 Insulation   VP Wrap	Timber	External	N/A
WDF INT   Plasterboard Stud Wall   Uninsulated   No Wrap	Timber	Internal	N/A
WDF INT   Plasterboard Stud Wall   R2.5 Insulation   No Wrap	Timber	Internal	N/A
WDF   Framed   Uninsulated   VP Wrap	Timber	External	N/A

	Refer to Plans/Dr	awings for the location of external wall	s.		
ADDITIONAL NOTES	Internal wall insul	ation: Garage and unconditioned wet-a	areas only		
	Wall Colour: Mediu	m			
		Roof and Ceiling			
CONSTRUCTION	ТҮРЕ	CEILING INSULATION (R)	SARKING	THERMAL BREAK?	BLANKET (R)
Ceiling with Floor	Above	None	No	No	None
Metal Roof OR Tiled Ro	of w/Sarking	2.5	No	No	1.3
Metal Roof OR Tiled Ro	of w/Sarking	None	No	No	1.3
Metal Roof OR Tiled Ro	of w/Sarking	6.0	No	No	1.3
	Solar Absorptance	e: Dark roof colour			
ADDITIONAL NOTES	Ceiling Insulation	to the House Area only			
		Floor			
CONSTRUCTION	ТҮРЕ	VENTILATION	FLOOR INSUL (R)	SLAB EDGE (R)	FLOOR AREAS (m
85mm Concrete   300	)mm Waffle	Enclosed	Integrated	None	78.4
AAC 75mm Suspended Floo	r   R4.0 Insulation	Enclosed	4.0	None	68.6
ACTEmm Cushended Flee	r l R4.0 Insulation	Elevated	4.0	None	1.8

Glazing							
	Glazing Frame Colour: Medium						
WERS CODE*	CHARACTERISTIC	TYPE	U <sub>w</sub> -VALUE	SHGCw	AREA (m <sup>2)</sup>	AS-BUILT GLAZING TYPES	
BRD-141-21 A	Double Glazing+SGL LowE	Stacker Door	2.84	0.51	7.68	Stacker doors	
ALS-039-32 A	Double Glazing+SGL LowE	Double-Hung Window	3.41	0.44	1.64	Double Hung Windows	
CAP-127-25 A	Double Glazing+SGL LowE	Sliding Window	2.71	0.51	12.04	Sliding Windows	
TIM-001-01 W	Standard Single Glazing	Hinged Door	5.40	0.56	3.84	Garage & Front doors	
TIM-002-01 W	Standard Single Glazing	Sidelight/s	5.40	0.63	0.80	Front door sidelight	
THC-015-19 B	Double Glazing+SGL LowE	Awning Window	3.21	0.45	8.59	Awning Windows	

This double storey has been modelled with fall-project screens to applicable upper floor windows as per NCC Protection of Openable Windows Advisory Note





## THE REGULATIONS

#### 13.7.1 Application of Part 13.7

(1) This Part applies to (a)a Class 1 building, (b)a Class 10a building, and (c)a Class 10b swimming pool associated with a Class 1 or 10a building. (2) Part 13.7 must be applied as directed in H6D2(2).

#### 13.7.2 Insulation of services

Thermal insulation for central heating water piping and heating and cooling ductwork must— (a)be protected against the effects of weather and sunlight, and (b)be able to withstand the temperatures within the piping or ductwork; and (c) use thermal insulation material by AS/NZS 4859.1.

#### 13.7.3 Central heating water piping

(1) Central heating water piping that is not within a conditioned space must be thermally insulated to achieve the minimum material R-Values as set out in (2) to (6). (2) Internal piping including— (a)flow and return piping that is— (i)within an unventilated wall space or

(ii)within an internal floor between storeys; or (iii)between ceiling insulation and a ceiling and

(b)heated water piping encased within a concrete floor slab (except that which is part of a floor heating system), must, in all climate zones, have a minimum material R-Value of 0.4.

(3) Piping located within a ventilated wall space, an enclosed building subfloor or a roof space, including-

(a)flow and return piping; and (b)cold water supply piping within 500 mm of the connection to the central water heating system; and (c)relief valve piping within 500 mm of the connection to the central water heating system, must have a minimum material R-Value by (5).

(4) Piping located outside the building or in an unenclosed building subfloor or roof space, including-

(a)flow and return piping; and (b)cold water supply piping within 500 mm of the connection to the central water heating system; and (c)relief valve piping within 500 mm of the connection to the central water heating system, must have a minimum material R-Value by (6).

(5) Piping referred to in (3) must have a minimum material R-Value of - (a)in climate zones 1, 2, 3 and 5 - 0.6; and

(b)in climate zones 4, 6 and 7 - 0.9; and (c)in climate zone 8 - 1.3.

(6)Piping referred to in (4) must have a minimum material R-value of-

(a)in climate zones 1, 2, 3 and 5 - 0.6; and (b)in climate zones 4, 6 and 7 - 1.3; and (c) in climate zone 8 - 1.3.

#### 13.7.4 Heating and cooling ductwork

(1) Heating and cooling ductwork and fittings must-

(a)achieve the material R-Value in (4), and (b)be sealed against air loss— (i)by closing all openings in the surface, joints and seams of ductwork with adhesives, mastics, sealants or gaskets by AS 4254.1 and AS 4254.2 for a Class C seal; or (ii)for flexible ductwork, with a draw band in conjunction with a sealant or adhesive tape. (2) Duct insulation must— (a)abut adjoining duct insulation to form a continuous barrier and

(b)be installed so that it maintains its position and thickness, other than at flanges and supports; and where located outside the building, under a suspended floor, in an attached Class 10a building or in a roof space— (i)be protected by an outer sleeve of protective sheeting to prevent the insulation becoming damp, and (ii)have the outer protective sleeve sealed with adhesive tape not less than 48 mm wide creating an airtight and waterproof seal.

(3) The requirements of (1) do not apply to heating and cooling ductwork and fittings located within the insulated building envelope including a service riser within the conditioned space, internal floors between storeys and the like.

(4)The material R-Value required by (1)(a) must be determined by the following: (a)In a heating-only system or cooling-only system including an evaporative cooling system— (i)ductwork must have a minimum material R-Value of— (A)in climate zones 1 to 7 – 1.0; and (B)in climate zone 8 – 1.5; and (ii)fittings must have a minimum material R-Value of 0.4.

(b)In a combined heating and refrigerated cooling system— (i)ductwork must have a minimum material R-Value of— (A)in climate zones 1, 3, 4, 6 and 7 – 1.5; and (B)in climate zones 2 and 5 – 1.0; and (C)in climate zone 8 – 1.5; and (ii)fittings must have a minimum material R-Value of 0.4.

(c)For (b)(i), the minimum material R-value required for ductwork may be reduced by 0.5 for combined heating and refrigerated cooling systems in climate zones 1, 3, 4, 6 and 7 if the ducts are— (i)under a suspended floor with an enclosed perimeter; or in a roof space that has an insulation of greater than or equal to R0.5 directly beneath the roofing.





Reference Number: 14\_Raven

## THE REGULATIONS

#### 13.7.5 Electric resistance space heating

An electric resistance space heating system that serves more than one room must have— (a)separate isolating switches for each room and (b) a separate temperature controller and time switch for each group of rooms with common heating needs and (c) power loads of not more than 110 W/m2 for living areas, and 150 W/m2 for bathrooms.

#### 13.7.6 Artificial lighting

(1)The lamp power density or illumination power density of artificial lighting, excluding heaters that emit light, must not exceed the allowance of— (a)5 W/m2 in a Class 1 building and (b)4 W/m2 on a Verandah, balcony or the like attached to a Class 1 building; and (c)3 W/m2 in a Class 10a building associated with a Class 1 building.

(2) The illumination power density allowance in (1) may be increased by dividing it by the relevant illumination power density adjustment factor for a control device in (6) as applicable.

(3) When designing the lamp power density or illumination power density, the power of the proposed installation must be used rather than nominal allowances for exposed batten holders or luminaires.

(4) If halogen lamps are installed, they must be separately switched from fluorescent lamps.

(5) Artificial lighting around the perimeter of a building must— (a)be controlled by a daylight sensor or (b)have an average light source efficacy of not less than 40 Lumens/W.

(6) The following illumination power density adjustment factors apply to control devices for artificial lighting:

(a)Lighting timer for corridor lighting: 0.7. Motion detector –(i)(A) at least 75% of the area of space is controlled by one or more motion detectors; or (b)an area of less than 200 m2 is switched as a block by one or more motion detectors; and (i)0.7, where up to 6 lights are switched as a block by one or more detectors; and (ii)0.55, where up to 2 lights are switched as a block by one or more detectors.

(c)Manual dimming system where not less than 75% of the space area is controlled by manually operated dimmers: 0.85.

(d)Programmable dimming system where not less than 75% of the space area is controlled by programmable dimmers: 0.85.

(e)Dynamic dimming system, with automatic compensation for lumen depreciation, the design lumen depreciation factor is not less than – (i)0.9 for fluorescent lights or (ii)0.8 for high-pressure discharge lights.

(f)Fixed dimming where at least 75% of the area is controlled by fixed dimmers that reduce the overall lighting level and the power consumption of the lighting – equal to the % of full power to which the dimmer is set divided by 0.95.

(g)Daylight sensor and dynamic lighting control device, with dimmed or stepped switching of lights adjacent to windows: (i)Lights within the space adjacent to windows other than roof lights for a distance from the window equal to the depth of the floor at window head height: 0.5. (ii)Lights within the space adjacent to roof lights: 0.6.

(7) For (6)(c), manual dimming is where lights are controlled by a knob, slider, or other mechanism or where there are pre-selected scenes that are manually selected.
(8) For (6)(d), programmed dimming is where pre-selected scenes or levels are automatically selected by the time of day, photoelectric cell, or occupancy sensor.
(9) For (6)(e), dynamic dimming is where the lighting level is varied automatically by a photoelectric cell to either proportionately compensate for the availability of daylight or the lumen depreciation of the lamps.

(10) For (6)(f), fixed dimming is where lights are controlled to a level, and that level cannot be adjusted by the user.

(11) For (6)(g)(i) and (ii), the illumination power density adjustment factor is only applied to lights controlled by that item – this adjustment factor does not apply to tungsten halogen or other incandescent sources.

#### 13.7.7 Water heater in a heated water supply system

A water heater in a heated water supply system must be designed and installed by Part B2 of NCC Volume Three – Plumbing Code of Australia.

#### 13.7.8 Swimming pool heating and pumping

(1) Heating for a swimming pool must be by- (a)a solar heater not boosted by electric resistance heating or

(b)a heater using reclaimed energy, (c)a gas heater, or (d)a heat pump, or (e)a combination of (a) to (d).

(2) Where some or all of the heating required by (1) is by a gas heater or a heat pump, the swimming pool must have— (a)a cover with a minimum R-Value of 0.05 unless located in a conditioned space and (b)a time switch to control the operation of the heater.

(3)A time switch must be provided to control the operation of a circulation pump for a swimming pool.

(4) For the purposes of 13.7.8, a swimming pool does not include a spa pool.

#### 13.7.9 Spa pool heating and pumping

(1) Heating for a spa pool that shares a water recirculation system with a swimming pool must be by- (a)a solar heater or

(b)a heater using reclaimed energy or a gas heater, or (d) (e) a combination of (a) to (d).

(2) Where some or all of the heating required by (1) is by a gas heater or a heat pump, the spa pool must have – (a) a cover and (b) a push button and a time switch to control the operation of the heater.

(3)A time switch must be provided to control the operation of a circulation pump for a spa pool having a capacity of 680 L or more.





## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 3ZLP2RZQPZ

Lot 14 (#14) Raven Circuit WARRIEWOOD,

Generated on 12 Apr 2025 using FirstRate5: 5.5.5a (3.22)

### Property

Address

Lot/DP NCC Class\* Floor/all Floors Type

Class 1a

2102, NSW, 2102

New Home

14\_Raven

14/-

### Plans

Main plan Prepared by

GJ Gardner Homes

## **Construction and environment**

Assessed floor area [m²]\*Conditioned\*117.2Unconditioned\*26.9Total144.1Garage17.9

Exposure type suburban NatHERS climate zone 56 Mascot AMO



## Accredited assessor

NameClaude-Francois SooklollBusiness nameEnergy AdvanceEmailenergy@energyadvance.com.auPhone1300 850 228Accreditation No.DMN/14/1662Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestNo

## **NCC Requirements**

NCC provisions State/Territory variation

Volume 2 Yes

#### National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

## Thermal performance star rating



## NATIONWIDE HOUSE ENERGY RATING SCHEME

R

## 29.8 MJ/m<sup>2</sup>

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

> For more information on your dwelling's rating see: www.nathers.gov.au

#### Thermal performance [MJ/m<sup>2</sup>] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	17.9	11.9
Load limits	N/A	N/A

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	N/A
Outdoor living area	N/A
Outdoor living area ceiling fan	N/A

## Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

## Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=3ZLP2RZQPZ When using either link, ensure you are visiting www.fr5.com.au.



\*Refer to glossary.

### About the ratings

#### Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value\* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

### **Heating & Cooling Load Limits**

#### Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

#### Setting options:



#### \*Refer to glossary.

#### Page 2 of 16

## Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

#### Energy use:



#### Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.



Certificate check	Approval	stage	Construc stage	tion	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	or checked	it authority/ or checked	checked	it authority/ or checked	incy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Assesse	Consen surveyo	Builder	Consen surveyo	Occupa
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the <i>Window and glazed door type and performance</i> ' and <i>'Roof window type and performance</i> ' tables on this Certificate?					
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?					
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?					
Floor	^	^		^	
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the ' <i>Ceiling type</i> ' table on this Certificate?					
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the ' <i>Roof type</i> ' table on this Certificate?					
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?					

\*Refer to glossary.



		Approval stage		Construction stage		
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other	
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)		
Thermal bridging						
Does the dwelling meet the NCC requirement for thermal bridging?						
Insulation installation method						
Has the insulation been installed according to the NCC requirements?						
Building sealing						
Does the dwelling meet the NCC requirements for Building Sealing?						
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)						
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?						
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?						
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)				
Does the lighting meet the artificial lighting requirements specified in the NCC?						
Does the hot water system meet the additional requirements specified in the NCC?						
Provisional values* check						
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?						
Other NCC requirements						
Nate: This Castificate calls account the ansatz officiants and interaction that NOO A	المحار المراجع والكالم الم				in Cin al	

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

#### Additional notes

BCA Climate Zone 5

Please note, a non-reflective vapour permeable wall wrap has been modelled throughout the external walls of this dwelling

Perimeter insulation has not been included in the modelling of this dwelling

Eaves indicated by the 'Horizontal shading feature\* maximum projection (mm)' may not be directly opposing the respective wall (i.e. some eaves may be horizontally offset)

Where applicable, an additional 150mm has been added to the projection of all 'Horizontal shading features & eaves' to account for the Gutter & Fascia Board



Please note, restricted window openings (%) have been modelled as per NCC requirements



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Family/Dining	kitchen	38.6
Powder	dayTime	1.4
Entry/Stairwell	dayTime	9.3
Office	dayTime	8.3
Garage	garage	17.9
Laundry	unconditioned	2.9
Bedroom 3	bedroom	10
Bedroom 2	bedroom	11
Bedroom 4	bedroom	8.4
Bath	unconditioned	6.1
Ensuite	nightTime	4.5
WIR	nightTime	4.3
Master Bedroom	bedroom	14.5
UF Landing	dayTime	11.7

## Window and glazed door type and performance

#### Default\* windows

				Substitution to	lerance ranges	
Window ID	Window description	Maximum U-value*	n SHGC* SHGC lower limit		SHGC upper limit	
TIM-001-01 W	Timber A SG Clear	5.4	0.56	0.53	0.59	
TIM-002-01 W	Timber B SG Clear	5.4	0.63	0.6	0.66	

#### Custom\* windows

				Substitution tolerance ranges			
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit		
BRD-141-21 A	Signature Sliding Stacking Door DG LightBridge_ClrS0_4-10-4	2.84	0.51	0.48	0.54		
ALS-039-32 A	92mm Carinya Select Double Hung Window DG 752mmFGISecurVeiw_6Ar_4mmFGIOptEmaClr	3.41	0.44	0.42	0.46		
CAP-127-25 A	Capral : Urban 584 Sliding Door DG 008_AGG PLUS Clr 4_10_4	2.71	0.51	0.48	0.54		
THC-015-19 B	Series EC45TB Awning Window DG 4mmClr-12Ar-4mmClr	3.21	0.45	0.43	0.47		

## Window and glazed door schedule

						Window
			Height	Width		shading
Location	Window ID	Window no.	[mm]	[mm] Window type	Opening % Orientation	device*

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Kitchen/Family/- Dining	BRD-141-21 A	W04	2400	3200	sliding	60.0	W	No
Kitchen/Family/- Dining	ALS-039-32 A	W05	1800	910	double_hung	45.0	W	No
Kitchen/Family/- Dining	CAP-127-25 A	W03	1500	2410	sliding	45.0	Ν	No
Entry/Stairwell	TIM-001-01 W	Opening 15	2340	820	casement	90.0	E	No
Entry/Stairwell	TIM-002-01 W	Opening 16	2340	340	fixed	0.0	E	No
Office	THC-015-19 B	W01	1800	610	awning	72.0	E	No
Office	THC-015-19 B	W02	1800	610	awning	72.0	E	No
Garage	TIM-001-01 W	Opening 17	2340	820	casement	90.0	S	No
Laundry	THC-015-19 B	W06	900	610	awning	90.0	S	No
Bedroom 3	CAP-127-25 A	W11	1200	1810	sliding	45.0	W	No
Bedroom 2	CAP-127-25 A	W12	1200	1810	sliding	45.0	W	No
Bedroom 4	CAP-127-25 A	W10	1200	1810	sliding	45.0	Ν	No
Bath	CAP-127-25 A	W13	900	1210	sliding	45.0	S	No
Ensuite	CAP-127-25 A	W14	900	910	sliding	45.0	S	No
WIR	THC-015-19 B	W07	1400	610	awning	80.0	E	No
Master Bedroom	THC-015-19 B	W08	1400	2650	awning	40.0	E	No
Master Bedroom	THC-015-19 B	W09	600	2140	awning	60.0	N	No

## Roof window\* type and performance value

#### Default\* roof windows

						Substit	Substitution tolerance ranges			
Window ID	Windo	w description	Maxi U-va	mum lue*	SHGC*	SHGC low	ver limit	SHG	e ranges C upper limit e ranges C upper limit	
No Data Ava	ilable									
Custom* roof	windows									
						Substit	tution to	leranc	e ranges	
Window ID	Windo	w description	Maxi U-va	mum lue*	SHGC*	SHGC low	ver limit	SHG	C upper limit	
No Data Ava	ilable									
Roof wir	dow* schedu	ıle								
			Opening	Area	Width		Outdo	or	Indoor	
Location	Window ID	Window no.	%	[m²]	[mm]	Orientation	shade		shade	
No Data Ava	ilable									
Skylight <sup>*</sup>	type and pe	rformance								
Skylight ID			Skylight o	descripti	on	Skylight	shaft re	flectar	nce	

No Data Available



## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient- ation	Outdoor shade	Diffuser
No Data							
Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	2400	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	NCC 2022 VAPOUR - TIMBER - WDF   Framed   R2.5 Insulation   VP Wrap	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
2	NCC 2022 VAPOUR - TIMBER - WDF   Framed   Uninsulated   VP Wrap	0.5	Medium		No

## External wall schedule

					Horizontal shading	
		Height	Width		feature* maximum	Vertical shading
Location	Wall ID	[mm]	[mm]	Orientation	projection [mm]	feature* (yes/no)
Kitchen/Family/Dining	1	2740	6900	W	567	Yes
Kitchen/Family/Dining	1	2740	3720	S	1160	Yes
Kitchen/Family/Dining	1	2740	6619	Ν	582	Yes
Entry/Stairwell	1	2740	1300	Е	1600	Yes
Entry/Stairwell	1	2740	2000	Ν	582	Yes
Office	1	2740	1000	S	2357	Yes
Office	1	2740	2750	E	582	No
Office	1	2740	3020	Ν	582	Yes
Garage	2	2825	580	W	0	Yes
Garage	2	2825	5519	S	600	Yes
Garage	2	2825	3250	E	602	Yes
Laundry	1	2740	1400	S	1180	Yes
Bedroom 3	1	2440	3000	W	712	No
Bedroom 3	1	2440	3545	Ν	712	Yes
Bedroom 2	1	2440	3230	W	712	No
Bedroom 2	1	2440	3600	S	712	Yes
Bedroom 4	1	2440	2985	N	712	Yes
Bath	1	2440	2840	S	712	Yes
Ensuite	1	2440	2090	S	712	Yes
WIR	1	2440	2020	S	712	Yes

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WIR	1	2440	2140	E	562	Yes
Master Bedroom	1	2440	120	E	1432	Yes
Master Bedroom	1	2440	1000	S	712	Yes
Master Bedroom	1	2440	3970	E	432	No
Master Bedroom	1	2440	3020	Ν	712	Yes
UF Landing	1	2760	580	E	3542	Yes
UF Landing	1	2760	2000	Ν	0	Yes
UF Landing	1	2760	580	W	7421	Yes

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
1	NCC 2022 STANDARD - TIMBER - WDF INT   Plasterboard Stud Wall   Uninsulated   No Wrap	99.3	
2	NCC 2022 STANDARD - TIMBER - WDF INT   Plasterboard Stud Wall   R2.5 Insulation   No Wrap	49.2	Glass fibre batt: R2.5 (R2.5)

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Family/D- ining	FLOOR - 85mm Concrete   300mm Waffle	34.7	Enclosed	R0.0	Vinyl
Kitchen/Family/D- ining	FLOOR - 85mm Concrete   300mm Waffle	3.8	Enclosed	R0.0	Vinyl
Powder	FLOOR - 85mm Concrete   300mm Waffle	1.4	Enclosed	R0.0	Vinyl
Entry/Stairwell	FLOOR - 85mm Concrete   300mm Waffle	9.3	Enclosed	R0.0	Vinyl
Office	FLOOR - 85mm Concrete   300mm Waffle	6.5	Enclosed	R0.0	Vinyl
Office	FLOOR - 85mm Concrete   300mm Waffle	1.8	Enclosed	R0.0	Vinyl
Garage	FLOOR - 85mm Concrete   300mm Waffle	3.2	Enclosed	R0.0	none
Garage	FLOOR - 85mm Concrete   300mm Waffle	14.7	Enclosed	R0.0	none
Laundry	FLOOR - 85mm Concrete   300mm Waffle	2.9	Enclosed	R0.0	Tiles
Bedroom 3	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	7.7	Enclosed	R4.0	Carpet
Bedroom 3	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	2.3	Enclosed	R4.0	Carpet

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Bedroom 2	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	8.5	Enclosed	R4.0	Carpet
Bedroom 2	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	2.5	Enclosed	R4.0	Carpet
Bedroom 4	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.1	Enclosed	R4.0	Carpet
Bedroom 4	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	7.2	Enclosed	R4.0	Carpet
Bath	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.2	Enclosed	R4.0	Tiles
Bath	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	4.9	Enclosed	R4.0	Tiles
Ensuite	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	0.8	Enclosed	R4.0	Tiles
Ensuite	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	3.6	Enclosed	R4.0	Tiles
WIR	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.6	Enclosed	R4.0	Carpet
WIR	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	2.7	Enclosed	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	0.6	Elevated	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.1	Elevated	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.2	Enclosed	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	10.1	Enclosed	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	0.8	Enclosed	R4.0	Carpet
Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	0.2	Enclosed	R4.0	Carpet

\*Refer to glossary.

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Master Bedroom	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	0.3	Enclosed	R4.0	Carpet
UF Landing	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	1.6	Enclosed	R4.0	Vinyl
UF Landing	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	3.7	Enclosed	R4.0	Vinyl
UF Landing	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	6.5	Enclosed	R4.0	Carpet

## Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Family/D- ining	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Kitchen/Family/D- ining	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Kitchen/Family/D- ining	Plasterboard	R2.5	Yes
Powder	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Entry/Stairwell	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Office	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Office	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Office	Plasterboard	R2.5	Yes
Garage	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Garage	Plasterboard	R0.0	Yes
Garage	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Laundry	FLOOR - AAC 75mm Suspended Floor   R4.0 Insulation	R4.0	No
Bedroom 3	Plasterboard	R6.0	Yes
Bedroom 3	Plasterboard	R2.5	Yes

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Bedroom 2	Plasterboard	R6.0	Yes
Bedroom 2	Plasterboard	R2.5	Yes
Bedroom 4	Plasterboard	R2.5	Yes
Bedroom 4	Plasterboard	R6.0	Yes
Bath	Plasterboard	R2.5	Yes
Bath	Plasterboard	R6.0	Yes
Ensuite	Plasterboard	R2.5	Yes
Ensuite	Plasterboard	R6.0	Yes
WIR	Plasterboard	R2.5	Yes
WIR	Plasterboard	R6.0	Yes
Master Bedroom	Plasterboard	R6.0	Yes
Master Bedroom	Plasterboard	R2.5	Yes
Master Bedroom	Plasterboard	R2.5	Yes
Master Bedroom	Plasterboard	R6.0	Yes
Master Bedroom	Plasterboard	R2.5	Yes
UF Landing	Plasterboard	R2.5	Yes
UF Landing	Plasterboard	R6.0	Yes
UF Landing	Plasterboard	R6.0	Yes

## Ceiling penetrations\*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
Kitchen/Family/Dining	1	Exhaust Fans	250	250	Sealed
Kitchen/Family/Dining	8	Downlights	90	90	Sealed
Powder	1	Exhaust Fans	250	250	Sealed
Powder	1	Downlights	90	90	Sealed
Entry/Stairwell	2	Downlights	90	90	Sealed
Office	2	Downlights	90	90	Sealed
Laundry	1	Downlights	90	90	Sealed
Bedroom 3	2	Downlights	90	90	Sealed
Bedroom 2	3	Downlights	90	90	Sealed
Bedroom 4	2	Downlights	90	90	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Bath	2	Downlights	90	90	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Ensuite	1	Downlights	90	90	Sealed
WIR	1	Downlights	90	90	Sealed
Master Bedroom	3	Downlights	90	90	Sealed
UF Landing	3	Downlights	90	90	Sealed



### Ceiling fans

Location	Quantity	Diameter [mm]
Kitchen/Family/Dining	1	1200
Office	1	1200
Master Bedroom	1	1200

## Roof type

	Added insulation		
Construction	[R-value]	Solar absorptance	Roof shade [colour]
Cont:Attic-Continuous	1.3	0.71	Dark

## Thermal bridging schedule for steel frame elements

Steel section dimensions			Steel thickness	Thermal break
Building element	[height x width, mm]	Frame spacing [mm]	[BMT,mm]	[R-value]
No Data				
Available				

## Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate) Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system			Minimum		December de l
Appliance/ system type	Location	Fuel type	Minimum effici	ency/	Recommended capacity
No Whole of Home perform	ance assessment	conducted for this certifi	cate.		
Heating system					
Annliance/ system type	Location	Fuel type	Minimum effici	ency/	Recommended capacity
No Whole of Home perform	ance assessment	conducted for this certifi	cate.		cupuony
Hot water system					
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 S	Assessed dail
No Whole of Home perform	ance assessment	conducted for this certifi	cate.		
Pool/spa equipment					
Appliance/ system type		Fuel type	Minimum performar	efficiency/ Ice	Recommended capacity
No Whole of Home perform	ance assessment	conducted for this certifi	cate		

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

No Whole of Home performance assessment conducted for this certificate.		

Orientation

### **Battery** schedule

#### (not applicable if a Whole of Home performance assessment is not conducted for this certificate)

#### System type

System type

No Whole of Home performance assessment conducted for this certificate.



System size or generation capacity

Size [battery storage capacity]

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#### **Explanatory Notes**

#### About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value\* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value\*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

#### Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

#### Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

#### Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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 – expose	d 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 –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap and emissivity value, it provides insulative
as foil)	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 features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently
(SHGC)	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	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
lights)	

\*Refer to glossary.

STCs

U-value

Thermal breaks

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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).

Window shading device a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal\* or vertical shading features\* (eg eaves and balconies)