

# Nationwide House Energy Rating Scheme®

## NatHERS® Certificate No. ARIEL0IA11

Generated on 11 Mar 2025 using FirstRate5: 5.5.5a (3.22)

### Property

**Address** 2, 11 Lucerne Street,  
Belmore, NSW, 2192  
**Lot/DP** 7/DP5200  
**NCC Class\*** Class 1a  
**Floor/all Floors**  
**Type** New Home

### Plans

**Main plan** 25 03 Rev A/10.03.2025  
**Prepared by** Amer Hazim

### Construction and environment

<b>Assessed floor area [m²]*</b>	<b>Exposure type</b>
Conditioned* 205.2	suburban
Unconditioned* 32.7	<b>NatHERS climate zone</b>
Total 237.9	56 Mascot AMO
Garage 20.5	



### Accredited assessor

**Name** Millard Perez  
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**Accreditation No.** 101510  
**Assessor Accrediting Organisation**  
ABSA  
**Declaration of interest** No

### NCC Requirements

**NCC provisions** Volume 2  
**State/Territory variation** Yes

#### National Construction Code (NCC) requirements

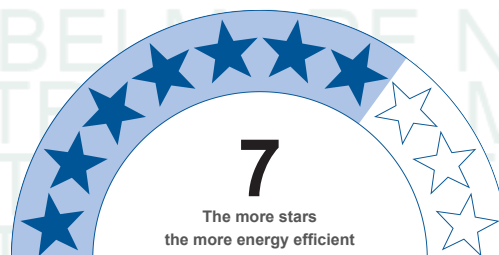
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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

**29.9 MJ/m²**

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](http://www.nathers.gov.au)

### Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
<b>Modelled</b>	17.5	12.4
<b>Load limits</b>	N/A	N/A
<b>Features determining load limits</b>		
Floor type (lowest conditioned area)		N/A
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://www.fr5.com.au/QRCodeLandIng?PublicId=ARIEL0IA11>  
When using either link, ensure you are visiting [www.fr5.com.au](http://www.fr5.com.au).





## 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:

Floor type:

- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No
- NA – not applicable

Outdoor living area:

- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:

- Yes
- No
- NA – not applicable

## 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:

No Whole of Home performance assessment conducted for this certificate.

### Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

### Cost:

No Whole of Home performance assessment conducted for this certificate.

### Graph key:



## Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Certificate check

The checklist covers important items impacting the dwelling's ratings.  
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.  
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		Occupancy/other
	Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	
<b>Genuine certificate check</b>					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Thermal performance check</b>					
<b>Windows and glazed doors</b>					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>External walls</b>					
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Floor</b>					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Ceiling penetrations*</b>					
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Ceiling</b>					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Roof</b>					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Apartment entrance doors (NCC Class 2 assessments only)</b>					
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Exposure*</b>					
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Heating and cooling load limits*</b>					
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
<b>Additional NCC requirements for thermal performance (not included in the NatHERS assessment)</b>					
<b>Thermal bridging</b>					
Does the dwelling meet the NCC requirement for thermal bridging?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Insulation installation method</b>					
Has the insulation been installed according to the NCC requirements?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Building sealing</b>					
Does the dwelling meet the NCC requirements for Building Sealing?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)</b>					
<b>Appliances</b>					
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 'Appliance schedule' on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 'Appliance schedule' on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Additional NCC Requirements for Services (not included in the NatHERS assessment)</b>					
Does the lighting meet the artificial lighting requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the hot water system meet the additional requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Provisional values* check</b>					
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?	<input type="checkbox"/>	<input type="checkbox"/>			

### Other NCC requirements

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

Number of ceiling penetrations have been assumed.

Eaves/overhangs may not be directly opposite to wall (some eaves may be horizontally offset).

150mm has been added to projection of eaves to account for the Gutter & Fascia Board.

Default solar absorptance/colours have been applied where no details had been provided at time of assessment.





## Room *schedule*

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living/Dining/Bathroom/Butler Pantry	kitchen	69.8
Entry/Stairs	dayTime	25.5
Bed 1	bedroom	10.6
Laundry	unconditioned	4.5
Garage	garage	20.5
Master Ensuite	nightTime	7.1
Bed 3	bedroom	12.1
Bathroom	unconditioned	7.7
Bed 2	bedroom	14.9
Master Bed/WIR	bedroom	28.9
Entry/Stair Void	doubleHeightVoid	14
Retreat	living	24.5
Bed 4	bedroom	13.9

## 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
No Data Available					

### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	ESS Sliding Door (80mm) SG 4Clr	6.19	0.74	0.7	0.78
BRD-112-01 A	ESS Awning 52 SG 4mmClr	6.54	0.67	0.64	0.7
BRD-001-37 A	ESS Sliding Window (52mm) SG 4mmClr	6.38	0.74	0.7	0.78
BRD-124_37 A	ESS Fixed Window External 52 SG 5mmClr	5.87	0.73	0.69	0.77

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living/- Dining/Bathroom-/Butler Pantry	BRD-033-01 A	28-42 ASD (WD5)	2800	4200	sliding	45.0	NW	No



Kitchen/Living/- Dining/Bathroom- /Butler Pantry	BRD-112-01 A	14-08 AAW (W3)	1400	800	awning	90.0	SW	No
Kitchen/Living/- Dining/Bathroom- /Butler Pantry	BRD-001-37 A	14-24 ASW (W04)	1400	2400	sliding	30.0	SW	No
Entry/Stairs	BRD-112-01 A	21-06 AAW (W06)	2100	600	awning	30.0	SE	No
Bed 1	BRD-001-37 A	13-17 ASW (W1)	1300	1700	sliding	45.0	SW	No
Laundry	BRD-112-01 A	13-08 AAW (W2)	1300	800	awning	90.0	SW	No
Garage	BRD-001-37 A	13-17 ASW (W1)	1300	1700	sliding	0.0	SW	No
Master Ensuite	BRD-112-01 A	12-08 AAW (W12)	1200	800	awning	90.0	SW	No
Bed 3	BRD-001-37 A	13-17 ASW (W01)	1300	1700	sliding	10.0	SW	No
Bathroom	BRD-112-01 A	12-08 AAW (W12)	1200	800	awning	90.0	SW	No
Bed 2	BRD-001-37 A	13-17 ASW (W01)	1300	1700	sliding	10.0	SW	No
Master Bed/WIR	BRD-001-37 A	15-33 ASW (W07)	1500	3300	sliding	10.0	NW	No
Master Bed/WIR	BRD-112-01 A	15-08 AAW (W11)	1500	800	awning	10.0	NW	No
Entry/Stair Void	BRD-124_37 A	18-12 AFW (W09)	1800	1200	fixed	0.0	SE	No
Entry/Stair Void	BRD-124_37 A	18-06 AFW (W10)	1800	600	fixed	0.0	SE	No
Bed 4	BRD-033-01 A	23-20 ASD (WD8)	2300	2000	sliding	45.0	SE	No

## Roof window\* type and performance value

### 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

\*Refer to glossary.



Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

## Skylight\* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
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
Entry/Stairs	2600	1200	100.0	SE
Garage	2600	2850	0.0	SE

## External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	TP-PW - Hebel Parti Wall	0.5	Medium		No
2	TP-HBL - Hebel Veneer	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No
3	TP-HBL - Hebel Veneer	0.5	Medium		No

## External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Kitchen/Living/Dining/Bathroom/Butler Pantry	1	3200	12038	NE	0	No
Kitchen/Living/Dining/Bathroom/Butler Pantry	2	3200	6044	NW	3500	Yes
Kitchen/Living/Dining/Bathroom/Butler Pantry	2	3200	9769	SW	0	Yes
Kitchen/Living/Dining/Bathroom/Butler Pantry	2	3200	301	SE	0	Yes
Kitchen/Living/Dining/Bathroom/Butler Pantry	2	3200	1473	SW	0	Yes
Entry/Stairs	1	2600	9137	NE	0	No
Entry/Stairs	2	2600	2479	SE	2000	Yes
Bed 1	2	2600	595	SW	0	Yes
Bed 1	2	2600	320	NW	0	Yes



Bed 1	2	2600	2981	SW	0	Yes
Laundry	2	2600	1687	SW	0	Yes
Garage	3	3000	6390	SW	0	Yes
Garage	3	3000	3001	SE	0	No
Garage	3	3000	1972	NE	2999	Yes
Garage	3	3000	453	SE	2000	Yes
Master Ensuite	2	2700	1994	SW	300	Yes
Bed 3	2	2700	3792	SW	600	Yes
Bathroom	2	2700	296	NW	14333	Yes
Bathroom	2	2700	3501	SW	300	Yes
Bed 2	2	2700	3595	SW	300	Yes
Bed 2	2	2700	298	SE	7320	Yes
Master Bed/WIR	1	2700	6045	NE	0	No
Master Bed/WIR	2	2700	6043	NW	600	No
Master Bed/WIR	2	2700	3946	SW	300	No
Entry/Stair Void	1	2700	5739	NE	0	No
Entry/Stair Void	2	2700	2484	SE	1770	Yes
Retreat	1	2700	9276	NE	0	No
Bed 4	2	2700	3464	SE	1770	Yes
Bed 4	2	2700	3924	SW	227	Yes

### Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	145.8	
2	ST - Internal Plasterboard Stud Wall_Garage	19.7	Glass fibre batt: R2.0 (R2.0)

### Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living/Dining/Bathroom/B-utler Pantry	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	69.8	Enclosed	R0.0	Tiles
Entry/Stairs	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	25.5	Enclosed	R0.0	Tiles
Bed 1	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	10.6	Enclosed	R0.0	Carpet
Laundry	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	4.5	Enclosed	R0.0	Tiles
Garage	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	5.3	Enclosed	R0.0	none
Garage	FR5 - 175mm waffle pod, 85mm concrete (R0.57)	15.2	Enclosed	R0.0	none





Master Ensuite	FR5 - 200mm concrete slab Lined	7.1	Enclosed	R0.0	Tiles
Bed 3	FR5 - 200mm concrete slab Lined	12.1	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab Lined	7.7	Enclosed	R0.0	Tiles
Bed 2	FR5 - 200mm concrete slab Lined	14.9	Enclosed	R0.0	Carpet
Master Bed/WIR	FR5 - 200mm concrete slab Lined	28.9	Enclosed	R0.0	Carpet
Entry/Stair Void	No Floor	14	Enclosed	R0.0	No Floor
Retreat	FR5 - 200mm concrete slab Lined	24.5	Enclosed	R0.0	Tiles
Bed 4	FR5 - 200mm concrete slab Lined	13.9	Enclosed	R0.0	Carpet

## Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living/Dining/Bathroom/Butler Pantry	FR5 - 200mm concrete slab Lined	R0.0	No
Entry/Stairs	FR5 - 200mm concrete slab Lined	R0.0	No
Bed 1	FR5 - 200mm concrete slab Lined	R0.0	No
Laundry	FR5 - 200mm concrete slab Lined	R0.0	No
Garage	Plasterboard	R0.0	No
Garage	FR5 - 200mm concrete slab Lined	R0.0	No
Master Ensuite	Plasterboard	R4.0	Yes
Bed 3	Plasterboard	R4.0	Yes
Bathroom	Plasterboard	R4.0	Yes
Bed 2	Plasterboard	R4.0	Yes
Master Bed/WIR	Plasterboard	R4.0	Yes
Entry/Stair Void	Plasterboard	R4.0	Yes
Retreat	Plasterboard	R4.0	Yes
Bed 4	Plasterboard	R4.0	Yes

## Ceiling penetrations\*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living/Dining/Bathroom/Butler Pantry	27	Downlights	90	90	Sealed



Kitchen/Living/Dining/Bathroom/Butler Pantry	2	Exhaust Fans	250	250	Sealed
Entry/Stairs	4	Downlights	90	90	Sealed
Bed 1	4	Downlights	90	90	Sealed
Laundry	1	Downlights	90	90	Sealed
Master Ensuite	2	Downlights	90	90	Sealed
Bed 3	4	Downlights	90	90	Sealed
Bathroom	2	Downlights	90	90	Sealed
Bed 2	4	Downlights	90	90	Sealed
Master Bed/WIR	10	Downlights	90	90	Sealed
Entry/Stair Void	5	Downlights	90	90	Sealed
Retreat	8	Downlights	90	90	Sealed
Bed 4	5	Downlights	90	90	Sealed

## Ceiling fans

Location	Quantity	Diameter [mm]
No Data Available		

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium
Cont:Attic-Continuous	1.3	0.5	Medium

## Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [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

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

### Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				



Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
No Whole of Home performance assessment conducted for this certificate.					

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			

Onsite renewable energy *schedule*

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

System type	Orientation	System size or generation capacity
No Whole of Home performance assessment conducted for this certificate.		

Battery *schedule*

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

System type	Size [battery storage capacity]
No Whole of Home performance assessment conducted for this certificate.	

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>AFRC</b>	Australian Fenestration Rating Council
<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, 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.
<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>COP</b>	Coefficient of performance
<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>EER</b>	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
<b>Energy use</b>	This is your homes rating without solar or batteries.
<b>Energy value</b>	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).
<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>Net zero home</b>	a home that achieves a net zero energy value*.
<b>Opening percentage</b>	the openability 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>Recommended capacity</b>	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.
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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 (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.

\*Refer to glossary.



<b>STCs</b>	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
<b>Thermal breaks</b>	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
<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).
<b>Window shading device</b>	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)