## Nationwide House Energy Rating Scheme<sup>®</sup> Multiple Class 1 dwellings Summary NatHERS<sup>®</sup> Certificate No. 0009176220

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP Lo NatHERS Climate Zone 9/

1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 9 Amberley



Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Or	ganisation
ABSA	



## NATIONWIDE HOUSE ENERGY RATING SCHEME

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## Verification

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#### 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 <u>www.abcb.gov.au.</u>

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

## Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m <sup>2</sup> /p.a.]	Cooling load (load limit) [MJ/m <sup>2</sup> /p.a.]	Total load [MJ/m²/p.a.]	Star Rating	Whole of Home Rating
0009176207	1	21.7 (N/A)	45.2 (N/A)	66.9	6	0
0009176181	2	18.9 (N/A)	44.7 (N/A)	63.5	6.2	0

Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for 1 Phillip St , Goonellabah , NSW , 2480



#### Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (load limit)	Cooling load (load limit)	Total load [MJ/m <sup>2</sup> /p.a.]	Star Rating	Whole of Home Rating
		[MJ/m <sup>2</sup> /p.a.]	[MJ/m <sup>2</sup> /p.a.]			
0009176140	3	13.9 (N/A)	30.0 (N/A)	43.9	7.7	0
0009176124	4	11.7 (N/A)	30.2 (N/A)	41.9	7.8	0
<u>0009176074</u>	5	14.0 (N/A)	29.9 (N/A)	43.8	7.7	0
0009176066	6	30.8 (N/A)	45.1 (N/A)	75.9	5.5	0
0009176215	7	28.9 (N/A)	44.3 (N/A)	73.1	5.7	0
0009176173	8	24.6 (N/A)	40.2 (N/A)	64.8	6.1	0
<u>0009176157</u>	9	23.8 (N/A)	35.6 (N/A)	59.4	6.4	0
0009176116	10	25.7 (N/A)	51.5 (N/A)	77.3	5.4	0
0009176090	11	25.2 (N/A)	53.0 (N/A)	78.1	5.4	0
0009176058	12	29.1 (N/A)	53.0 (N/A)	82.1	5.2	0
0009176199	13	27.6 (N/A)	53.0 (N/A)	80.6	5.3	0
0009176165	14	28.7 (N/A)	52.4 (N/A)	81.1	5.3	0
0009176132	15	26.7 (N/A)	27.1 (N/A)	53.8	6.9	0
0009176108	16	40.8 (N/A)	44.8 (N/A)	85.6	5.1	0
0009176082	17	36.7 (N/A)	52.0 (N/A)	88.8	4.9	0
0009176041	18	34.3 (N/A)	48.3 (N/A)	82.5	5.2	0

### **Explanatory notes**

#### About this ratings

Individual unit ratings are listed in the 'Summary of all dwellings' section of this Certificate.

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 energy loads and societal cost. 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 production and storage to estimate the homes societal cost.

For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

#### **Accredited Assessors**

For high quality 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.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register.

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.

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The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates 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 use, 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.

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## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0009176207

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class Floor/all Floors Type

Unit 1, 1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley

#### ccredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation
Declaration of interest	Declaration completed: no conflicts

## NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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.

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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

The more stars the more energy efficient

# NATIONWIDE

## 66.9 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	21.7	45.2
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

### Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

#### Verification

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### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 6 Star Rating as of 11 Jan 2024

Certificate check	Approva	I Stage	Constru Stage	HOUSE	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder checked	Consent Surveyo	Occupar
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176207 NatHERS Certificate       6 Star Rating as of 11 Jan 2024					HOUSE
	Approva	al Stage	Constru Stage	ction	
Certificate check	ecked	hority/ ecked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)	
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			1	1	
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Hom	e perform	ance asse	ssment is I	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)	Ţ	
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	ĥ	^	0	n	
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add but are not limited to: condensation, structural and fire safety requirements and any st					

Additional notes

requirements.

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum U-value* SHGC*		Substitution tolerance ranges			
WINDOW ID	Description			SHGC lower limit	SHGC upper limit		
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60		
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38		
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43		

#### Custom windows\*

Window ID Window Maximum SHGC* -		Substitution tolerance ranges			
WINGOW ID	Description	U-value*	3160	SHGC lower limit SHGC upper l	
No Data Availa	able				

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W9	1500	2400	Awning	90	E	No
Kitchen/Living	ALM-001-01 A	W10	2400	900	Louvre	90	W	No
Kitchen/Living	ALM-002-04 A	W12	2400	2700	Sliding	65	Ν	No
Kitchen/Living	ALM-001-04 A	W7	1500	3200	Awning	90	E	No
Bed 2	ALM-001-04 A	W11	600	2100	Awning	90	Ν	No
Bed 2	ALM-002-04 A	W8	2400	2100	Sliding	65	E	No



## Roof window\* type and performance value

Default roof windows\*

Window	Maximum		Substitution tolerance ranges		
Description	U-value*	SHGC"	SHGC lower limit	SHGC upper limit	
able					
indows*					
Window	Maximum	SUCC*	Substitution to	lerance ranges	
Description	U-value*	SHGC"	SHGC lower limit	SHGC upper limit	
able					
adie					
'İ	Description able indows* Window Description	Description     U-value*       able     indows*       Window     Maximum       Description     U-value*	Description     U-value*     SHGC*       able     indows*     Window     Maximum       Description     U-value*     SHGC*	Description U-value* SHGC* SHGC lower limit able indows* Window Maximum Description U-value* SHGC* SHGC lower limit	

#### 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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	W

## External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2000	S	1000	No
Bed 1	EW-1	2700	3295	Е	0	Yes
Bath	EW-1	2700	1800	W	1200	No
Kitchen/Living	EW-1	2700	3995	W	1200	No
Kitchen/Living	EW-1	2700	4200	Ν	4400	No
Kitchen/Living	EW-1	2700	4000	Е	0	Yes
Kitchen/Living	EW-1	2700	1100	S	0	No
Bed 2	EW-1	2700	3295	W	2800	No
Bed 2	EW-1	2700	4000	Ν	1100	Yes
Bed 2	EW-1	2700	3295	Е	4200	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	15.39	Bulk Insulation in the centre R1
IW-002	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Suspended Concrete Slab 150mm	11.52	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm
WC	Suspended Concrete Slab 150mm	1.94	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Bath	Suspended Concrete Slab 150mm	4.09	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm

0009176207 NatHERS Certificate

6 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Ldry/Hall	Suspended Concrete Slab 150mm	4.99	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	32.65	Basement Carpark	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bed 2	Suspended Concrete Slab 150mm	13.14	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 1, 1 Phillip St , Goonellabah , NSW , 2480

0009176207 NatHERS Certificate	6 Star Rating as of 11 Jan 2024	
Location	Quantity	Diameter [mm]
Kitchen/Living	2	1200
Bed 2	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ formance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ iormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							



## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

**Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### 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.

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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

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
<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.
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.
Skylight (also known as roof lights	
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176181

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 2, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation 24
Declaration of interest	Declaration completed: no conflicts

## NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

### Thermal performance Star rating

6.2 The more stars the more energy efficient

## NATIONWIDE HOUSE ENERGY RATING SCHEME

## 63.5 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	18.9	44.7
Load limits	N/A	N/A

#### Features determining load limits

Floor Type (lowest conditioned area)	CSOG
	1044
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=VNfyqnNZG . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 6.2 Star Rating as of 11 Jan 2024

					HOUSE
Certificate check	Approva	I Stage	Constru Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

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0009176181 NatHERS Certificate6.2 Star Rating as of 11 Jan 2024					HOUSI
	Approva	al Stage	Constru Stage	ction	
Certificate check	lecked	thority/ ecked	ked	thority ecked	Other
Continued	Assessor checked	Consent Authority Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	essment)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method		1			
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 Hom	e perform	ance asses	ssment is I	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)		
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	7	7	ō	0	
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add but are not limited to: condensation, structural and fire safety requirements and any st requirements.					

Additional notes

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

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

### Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W6	2400	1800	Sliding	65	E	No
Kitchen/Living	ALM-002-04 A	W1	2400	2700	Sliding	65	Ν	No
Kitchen/Living	ALM-002-04 A	W12	2400	3200	Sliding	65	E	No
Bed 2	ALM-002-04 A	W8	2400	2100	Sliding	65	E	No

## Roof window\* type and performance value

#### Default roof windows\*

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



Custom roof windows\*

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

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Avai	lable							

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser	
No Data Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	W

### External wall type

Wall Wall		Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3695	S	0	No
Bed 1	EW-1	2700	3295	Е	400	Yes
WC	EW-1	2700	1090	S	0	No
Bath	EW-1	2700	2295	S	0	No

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6.2 Star Rating as of 11 Jan 2024



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]	
Bath	EW-1	2700	1800	W	2800	No	
Kitchen/Living	EW-1	2700	3995	W	2800	No	
Kitchen/Living	EW-1	2700	4200	Ν	3300	No	
Kitchen/Living	EW-1	2700	4000	Е	0	Yes	
Kitchen/Living	EW-1	2700	1100	S	0	No	
Bed 2	EW-1	2700	3295	Е	3100	Yes	

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation
IW-002	Stud, plasterboard	24.84	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m <sup>2</sup> ]	Sub-floor ventilation	Added insulation [R-value]	Covering	
Bed 1	Concrete Slab on Ground	11.52	None	No	Carpet+Rubber Underlay	
bed i	100mm	100mm		Insulation	18mm	
WC	Concrete Slab on Ground	1.94	None	No	Ceramic Tiles 8mm	
WC	100mm	1.94				
Poth	Concrete Slab on Ground	4.09	None	No	Ceramic Tiles 8mm	
Bath	100mm	4.09	None	Insulation		
l dn/Hall	Concrete Slab on Ground	4.99	None	No	Ceramic Tiles 8mm	
Ldry/Hall	100mm	4.99	None	Insulation		
Kitobon/Living	Concrete Slab on Ground	32.65	None	No	Cork Tiloo or Dorgustry 9mm	
Kitchen/Living	100mm	32.00	None	Insulation	Cork Tiles or Parquetry 8mm	
Bed 2	Concrete Slab on Ground	13.14	None	No	Carpet+Rubber Underlay	
	100mm	13.14	INOLIE	Insulation	18mm	

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	

0009176181 NatHE	RS Certificate	6.2 Star Rating as of 11 Jan 2024	THEORY
Location	Construction material/type	Bulk insulation R-value (may include edge batt value	Reflective
Bed 2	Plasterboard on	Timber Bulk Insulation R1	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]
None Present			

## 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  $5W/m^2$  is used for lighting, therefore lighting is not included in the appliance schedule.

0009176181 NatHERS Certificate	6.2 Sta	r Rating as of 1	1 Jan 2024				HOUS
Cooling system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ ormance		mended acity
No Data Available				•			
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ formance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available						••	
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							
Onsite Renewable Er	nergy Sch	edule					
System Type Orie	ntation		Syst	em Size O	r Generation	Capacity	

## Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



#### 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 floor area modelled in the software for the haing and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area in the design documents.           Ceiling penetrations         Extract the design documents.           Ceiling penetrations         Extract the design documents.           Common the design documents.         Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Coefficient of performance         externs that attached to the ceiling including downights, vents, exhaust fans, range hoods, chinneys and flues.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rains.           Default windows         windows intat are expresentative of a specific type of window product and whose properties have been derived by statistical energy value           Energy theorem that are expresentative of a specific type of window gradue and must not be modelled as a door whorks (as defined in the AGE Housing Provisions Standard).           Entrance door         The net cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the AGE Housing Provisions Standard).           Exposure category - open         terrain with no obstructions below Tom e.g. suburban Housing, heavily venilation b	AFRC	Australian Fenestration Rating Council
Assessed floor area         Interfact of the particles           Ceiling penetrations         Eastward to design documents.           Ceiling penetrations         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Conditioned         a zone within a develing this supected to require heating and cooling based on standard occupancy assumptions. In some dricumstances it will include garages.           Custom windows         gindows listed in NaHE-RSS Salware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         mithods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy value         This is your homes rating without solar or batteries.           Energy value         This is your homes rating without solar or batteries.           Energy value         The net cost to solary to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category – open         terrain with no bastructions e.g. flig trazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely papeed obstructions lowerit on e.g. clip a		
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupacy assumptions. In some drammatices if will include garages.           Custom windows         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           Default windows         Window 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 walue         The net cost to society including, but not innited to costs to the building user, the environment and energy networks (as these signify vontilation benefits in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a class 2 building.           Exposure category - sposed         terrain with no obstructions eleo.           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as therain with no obstructions eleo.           Exposure category - portexted by exposed big regramation with scattered sheads. lightly vegetated bush block, elevated units (e.g. above 3 loors).           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as there how about any environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks and anothot acting a settered sheads.		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows 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.           ERR         Energy Lifeliency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity.           Energy value         Thes is your homes rating without solar or batteries.           Entrance door         the ABCE Housing Provisions Standard).           Exposure category – exposed         terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few obstructions are or protected.           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. edva and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions cere be found at www.acepodeshald areas.           Ret	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.
Curronitational         circumstances it will include garages.         Image: Section 2016           Custom windows         windows tletcl in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.         windows that are representative of a specific type of window product and whose properties have been derived by statistical products.           EER         Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category = exposed         Exposure category = exposed           Exposure category = protected         train with no costructions e dow dware and must not be modelled as a door when opening to a minimally verifitation becase / building.           Exposure category = protected         terrain with nomerous, closely spaced obstructions below Tom, farmland with scietaria with numerous, closely spaced obstructions below Tom e, g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhangs or balconies from uppartial with market and tatched Class 1.0b building. Definitions can be found at www.bdb.gov.au.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhan	COP	Coefficient of performance
Classifier         Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           ERR         Energy Ufficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           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 ABCE Housing Provisions Standard).           Entrance door         the net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no bostructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – ponel         seatered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. above 3 floors).           Not actional shading feature         The openability percentage or operable (moveable) area of doors on windows that is used in ventilation calculations.           Not actional value th does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of the comentation, a provisional value of medium must be modelled. Accceptable provisional values a	Conditioned	circumstances it will include garages.
Details withows         methods.           EER         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 ABCE 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 Cast 2 building.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Horizontal shading feature         The openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anstitonal Construction Code         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anome that achieves a net zero energy value.         on windows that is used in ventilation calculations.           An asyme they developed the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An some that achieves	Custom windows	
LLK         input <sup>2</sup> Energy value         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 Frovisions 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         see exposure categories below.           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. dist down flow solar dobstructions or e.g. suburban housing, heavily vegetated bushand areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         a home that achieves a net zero energy value <sup>*</sup> .           Provisional value         crab engiption that is cocommended by Nati-ERS to achieve the desired comfort conditions. a nassumed value that does nor represent an actual value. For example, if the wa	Default windows	
Energy value         The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined to heads for building.           Entrance door         The net cost to society including.         Dut not limited to, costs to the building user, the environment and energy networks (as defined to heads for the ABCS Housing Provisions Standard).           Exposure         see exposure category exposure         see exposure category is the modelling, and coean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with new obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush locks, elvested units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. at/wall in dustria frag.         description of the abstructions as a similar height e.g. gaass, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           National Construction Code         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 10 buildings. Definitions can be found at www.hock.gov.au.           Provisional value         a home that achieves a net zero energy value*.         Corporate on the cargority or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions. In the caracity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the cargority or size of equipment that is recommende	EER	
Entry value         defined in the ABCB Housing Provisions Standard).         Exercise           Entrance door         these signify ventilated corridor in a Class 2 building.           Exposure         see exposure category exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Provisional shading feature         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           National Construction Code         the National Construction Code         the National Construction Code           Net zero home         a home that achivers on an etar zero energy value*           Provisional value         an assumed value that does on or expresent an actual value. Acceptable provisional values are outlined in the NatHERS to home an assumed value that does on or size or earnple. If the wall colour is unspecified in the documentation, and case and the wall actacher or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified           Reflective wrap (also known as roof light) for NatHERS to is is typically a moulded unit with River Mercina values eves.         services, and generally does not have a diffuser.           Skylight (aliso kn	Energy use	
Entranse dool         ventilated corridor in a Class 2 building.           Exposure         see exposure category – exposed           Exposure category – open         see exposure category – open           Exposure category – open         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 no obstructions de 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 – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. situan housing, heavily vegetated bushland areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. situan industrial areas.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         the openability percentage or oprable (moveable) area of doors or windows that is used in ventilation calculations.           Recommended capacity         an assumed value that does not represent an actual value. Acceptable provisional value and a www. nathers.gov.au           Reflective wrap (also known as roof lights) for NatHERS this is typically an operable (moveable). Acceptable provisional value are outlined in the NatHERS technical Note space.           Shading features         includes neightowing buildings, fences, and wing walls, but excludes eaves.           <	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m.e.g. uburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Motizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moves) buildings. Definitions can be found at www.abcb.gov.au.           Recommended capacity         a nome that achieves a net zero energy value*.           Reflective wrap (also known as roof lingh) due to due of meduim must be modelled. Acceptable provisional value and save and assigns a classification scing should be confirmed by a suitably qualified person.           Reflective wrap (also known as roof lingh) due by operable (moveable) area of doors or window with an appropriate airgap and emissivity value, it provides finding features           Shading features         includes neighbouring buildings, fences, and wing wealls, but excludes aves.           Skylig	Entrance door	ventilated corridor in a Class 2 building.
Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 boundings. Definitions can be found at www.abcl.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Provisional value         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a prisional value of une of time wanters.gov.au           Net zero home         an assumed value that does not represent mactual value. For example, if the wall colour is unspecified in the documentation, a previsional value are function and the final selection sizing should be confirmed by a suitably qualified properties.           Recommended capacity         rsize are open wanter is gov.au           this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired orminot conditions in the zone or oser serviced. This is a recommendation and the final	· · · · · · · · · · · · · · · · · · ·	
Exposure category – protected         scattered sheas, lignty vegetated bush blocks, elevated units (e.g. above 3 hoors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         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 tatched Class 10a buildings. Definitions can be found at www.abch.gov.au.           Provisional value         a home that achieves a net zero energy value*.           Provisional value         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value, for example, if the wall colour is unspecified in the documentation, a not with must be modelled. Acceptable provisional values of not at the documentation, a nassumed value that does not represent an actual value, is to achieve the desired comfort conditions in the zon or zones seriviced. This is a recommended by NattHERS to achieve the desire	Exposure category – exposed	
Exposure category - suburban         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.hathers.gov.au.           Recommended capacity         zize of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or or serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as foll)         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.           Stading features         includes neighbouring buildings, fences,	Exposure category – open	scattered sneds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically an operable window (i.e. can be opened), will have a diffuser at ceiling level.           Store         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 Regulator (CER) as polystyreme insulation sheeling or have a simber batters greater than or equal to 20mm thick or continuous thermal breaks such as polystyreme insulation sheelin		
National Construction Code (NCC) class         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 10 a 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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, and can be found at www.nathers.gov.au           Recommended capacity         and can be found at www.nathers.gov.au           Reflective wrap (also known as foll)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Raof 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, forces, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level.           Solar heat gain coefficient (SHGC)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at well as absorbed a	Exposure category – suburban	
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         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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Start gain coefficient (SHGC)         The fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat gain coefficient (SHGC)           Strall         The fracton of incident solar radiation admitted through a window, both di	Horizontal shading feature	from upper levels.
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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and wubequiption doub a solar operator between 0 and 1. The lower a window's SHGC, the less solar heat if transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           are materials with an R-value greater than or equal to 0.2 th	(NCC) Class	
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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         StGS       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 Regulator (CER)         are materials with an R-value greater than or equal to 0.2. that must separate the metal frame from the cladding. This includes, such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such		07
Provisional value       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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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 ransmits.         STCs       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 Regulator (CER)         U-value	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u - conditioned       a zone within a dwelling that is assumed to not requ	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         urremationed       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         provi	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Rtor window         space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         privacy screens, other walls in the building (wing walls), hences, other buildings, vegetation (protected or listed heritage hereise).	Reflective wrap (also known as foil)	
Skylight (also known as roof lights) for NatHERŠ this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and solat as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fonces, other buildings, vegetation (protected or listed heritage trees).         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	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.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Shading features	
Strandard game coefficient (SHGC)       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.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Show         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>+</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Solar heat gain coefficient (SHGC)	subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading dovice Window shading dovice Window shading dovice	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176140

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 3, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

#### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 50.2 Unconditioned\* 0.0 Total 50.2 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation 24
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

Thermal performance Star rating

The more stars the more energy efficient

## HOUSE ENERGY RATING SCHEME

## 43.9 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
lodelled	13.9	30.0
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=IASCLUmAQ . When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 7.7 Star Rating as of 11 Jan 2024

Certificate check	Approva	l Stage	Constru Stage	ction	HOUSI
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder	Consent Surveyo	Occupai
Genuine certificate check		ſı	л		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					



					HOUSE	
	Approval Stage			Construction Stage		
Certificate check	ecked	ority/	ked	ority	other	
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other	
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	essment)		
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 Hom	e perform	ance asse	ssment is i	not conduc	ted)	
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)			
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						
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add	itional requi	rements that	t 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

Downlights must not penetrate ceiling insulation.



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
willdow iD	Description	U-value*	3160	SHGC lower limit	SHGC upper limit
No Data Availa	able				

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W2	2400	2400	Sliding	65	S	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	No
Kitchen/Living	ALM-001-04 A	W4	1500	900	Awning	90	S	No

## Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description	U-value*	3160	SHGC lower limit	SHGC upper limit
No Data Available					



Custom roof windows\*

Window ID	Window	Maximum	SHCC*	Substitution to	lerance ranges
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Avai	lable				

## 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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser		
No Data Available								

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

### External wall type

Wall Wall			de Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No
Kitchen/Living	EW-1	2700	2000	E	1100	No
Kitchen/Living	EW-1	2700	3895	S	1800	No

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Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]	_
Bath	EW-1	2700	1800	Ν	1600	No	

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	24.03	Bulk Insulation in the centre R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	35.37	No insulation
IW-003	Stud, plasterboard	4.32	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Concrete Slab on Ground 100mm	11.61	None	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab on Ground 100mm	28.76	None	No Insulation	Cork Tiles or Parquetry 8mm
Ldry	Concrete Slab on Ground 100mm	3.63	None	No Insulation	Ceramic Tiles 8mm
WC	Concrete Slab on Ground 100mm	1.94	None	No Insulation	Ceramic Tiles 8mm
Bath	Concrete Slab on Ground 100mm	4.27	None	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Ldry	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
Kitchen/Living	5	Downlights - LED	0	Sealed
Ldry	2	Downlights - LED	0	Sealed

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 3, 1 Phillip St , Goonellabah , NSW , 2480

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Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed	
WC	1	Downlights - LED	0	Sealed	
Bath	1	Downlights - LED	0	Sealed	

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]
None Present			

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling	system
---------	--------

Appliance/ system type	Lo	cation	Fuel type	eff	nimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation	Fuel type	eff	nimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zor		Zone 3 STC		<b>bstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							

0009170140 Nathers C	Certificate	7.7 Star Rating as of 11 Jan	2024	ii ii
Pool/spa equipment				
Appliance/ system ty	vpe	Fuel type	Minimum efficiency/ performance	Recommended capacity
			periormanee	
No Data Available			performance	
No Data Available Onsite Renewa	able Energ	gy Schedule	performance	
	able Energ		System Size Or Generati	on Capacity

 System Type
 Size [Battery Storage Capacity]

 No Data Available

ALL DA



#### **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<sup>\*</sup>.

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

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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 as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Skylight (also known as roof lights)	) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eq eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176124

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 4, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

#### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\*50.2Unconditioned\*0.0Total50.2Garage0.0

Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard	
Business name	Partners Energy Management	
Email	david@partnersenergy.com.au	
Phone	0421381005	
Accreditation No.	20039	
Assessor Accrediting Orga ABSA	inisation 24	
Declaration of interest	Declaration completed: no conflicts	

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <a href="http://www.abcb.gov.au">www.abcb.gov.au</a>.

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

Thermal performance Star rating

The more stars the more energy efficient

## HOUSE ENERGY RATING SCHEME

## 42.0 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	11.7	30.2
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=lkzMPxLpB. When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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

NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes No

NA – Not Applicable

### Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 7.8 Star Rating as of 11 Jan 2024

Certificate check	cate check Approval Stage				
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Asses	Conse Survej	Builde	Conse Survej	Occup
Genuine certificate check		л	л		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176124 NatHERS Certificate       7.8 Star Rating as of 11 Jan 2024					HOUSE
	Il Stage	Stage Construction Stage			
Certificate check	ecked	hority/ ecked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)		
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Addi	itional requi	rements tha	t must also	be satisfied	include,

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

Downlights must not penetrate ceiling insulation.



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum SHGC*		Substitution tolerance ranges		
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC* -	Substitution tolerance ranges		
	Description	U-value*	3160	SHGC lower limit	SHGC upper limit	
No Data Availa	able					

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W2	2400	2400	Sliding	65	S	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	No
Kitchen/Living	ALM-001-04 A	W4	1500	900	Awning	90	S	No

## Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description U-value*		SHGC" -	SHGC lower limit	SHGC upper limit
No Data Avail	able				

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 4, 1 Phillip St , Goonellabah , NSW , 2480



Custom roof windows\*

Window ID	Window	Maximum	SHCC*	Substitution to	lerance ranges
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Avai	lable				

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Ava	ilable							

## Skylight\* type and performance

 Skylight ID
 Skylight description
 Skylight shaft reflectance

 No Data Available
 Volume
 Volum
 Volume
 Volume

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Avai	lable					

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

#### External wall type

Wall	Wall		de Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No
Kitchen/Living	EW-1	2700	3895	S	1800	No
Bath	EW-1	2700	1800	Ν	1600	No



## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	29.43	Bulk Insulation in the centre R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	35.37	No insulation
IW-003	Stud, plasterboard	4.32	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Concrete Slab on Ground 100mm	11.61	None	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab on Ground 100mm	28.76	None	No Insulation	Cork Tiles or Parquetry 8mm
Ldry	Concrete Slab on Ground 100mm	3.63	None	No Insulation	Ceramic Tiles 8mm
WC	Concrete Slab on Ground 100mm	1.94	None	No Insulation	Ceramic Tiles 8mm
Bath	Concrete Slab on Ground 100mm	4.27	None	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Ldry	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed	
Bed 1	3	Downlights - LED	0	Sealed	
Kitchen/Living	5	Downlights - LED	0	Sealed	
Ldry	2	Downlights - LED	0	Sealed	
WC	1	Downlights - LED	0	Sealed	
Bath	1	Downlights - LED	0	Sealed	



## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	Fuel type	effi	nimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	effi	nimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3 STC -		ibstitution e ranges	Assessed daily load
		CER Zone	/STC	0.0	lower limit	upper limit	[litres]

No Data Available

Pool/spa equipment	7.8 Star Rating as of 11 Jan 2024		HOUS
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

## Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



#### **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<sup>\*</sup>.

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 floor area modelled in the software for the haing and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area in the design documents.           Ceiling penetrations         Extract the design documents.           Ceiling penetrations         Extract the design documents.           Common the design documents.         Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Coefficient of performance         externs that attached to the ceiling including downights, vents, exhaust fans, range hoods, chinneys and flues.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rains.           Default windows         windows intat are expresentative of a specific type of window product and whose properties have been derived by statistical energy value           Energy theorem that are expresentative of a specific type of window gradue and must not be modelled as a door whorks (as defined in the AGE Housing Provisions Standard).           Entrance door         The net cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the AGE Housing Provisions Standard).           Exposure category - open         terrain with no obstructions below Tom e.g. suburban Housing, heavily venilation b	AFRC	Australian Fenestration Rating Council
Assessed floor area         Interfact of the particles           Ceiling penetrations         Eastward to design documents.           Ceiling penetrations         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Conditioned         a zone within a develing this supected to require heating and cooling based on standard occupancy assumptions. In some dricumstances it will include garages.           Custom windows         gindows listed in NaHE-RSS Salware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         mithods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy value         This is your homes rating without solar or batteries.           Energy value         This is your homes rating without solar or batteries.           Energy value         The net cost to solary to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category – open         terrain with no bastructions e.g. flig trazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely papeed obstructions lowerit on e.g. clip a		
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupacy assumptions. In some drammatices if will include garages.           Custom windows         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           Default windows         Window 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 walue         The net cost to society including, but not innited to costs to the building user, the environment and energy networks (as these signify vontilation benefits in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a class 2 building.           Exposure category - sposed         terrain with no obstructions eleo.           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as therain with no obstructions eleo.           Exposure category - portexted by exposed big regramation with scattered sheads. lightly vegetated bush block, elevated units (e.g. above 3 loors).           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as there how about any environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks and anothot acting a settered sheads.		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows 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.           ERR         Energy Lifeliency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity.           Energy value         Thes is your homes rating without solar or batteries.           Entrance door         the ABCE Housing Provisions Standard).           Exposure category – exposed         terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few obstructions are or protected.           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. edva and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions cere be found at www.acephowethow the scheme of the scategre of a building in th	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.
Curronitational         circumstances it will include garages.         Image: Section 2016           Custom windows         windows tletcl in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.         windows that are representative of a specific type of window product and whose properties have been derived by statistical products.           EER         Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category = exposed         Exposure category = exposed           Exposure category = protected         train with no costructions e dow dware and must not be modelled as a door when opening to a minimally verifitation becase / building.           Exposure category = protected         terrain with nomerous, closely spaced obstructions below Tom, farmland with scietaria with numerous, closely spaced obstructions below Tom e, g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhangs or balconies from uppartial with market and tatched Class 1.0b building. Definitions can be found at www.bdb.gov.au.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhan	COP	Coefficient of performance
Classifier         Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           ERR         Energy Ufficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           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 ABCE Housing Provisions Standard).           Entrance door         the net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no bostructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – ponel         seatered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. above 3 floors).           Not actional shading feature         The openability percentage or operable (moveable) area of doors on windows that is used in ventilation calculations.           Not actional value th does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of the comentation, a provisional value of medium must be modelled. Accceptable provisional values a	Conditioned	circumstances it will include garages.
Details withows         methods.           EER         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 ABCE 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 Cast 2 building.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Horizontal shading feature         The openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anstitonal Construction Code         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anome that achieves a net zero energy value.         on windows that is used in ventilation calculations.           An asyme they developed the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An some that achieves	Custom windows	
LLK         input <sup>2</sup> Energy value         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 Frovisions 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         see exposure categories below.           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. dist down flow solar dobstructions or e.g. suburban housing, heavily vegetated bushand areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         a home that achieves a net zero energy value <sup>*</sup> .           Provisional value         crab engiption that is cocommended by Nati-ERS to achieve the desired comfort conditions. a nassumed value that does nor represent an actual value. For example, if the wa	Default windows	
Energy value         The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined to heads for building.           Entrance door         The net cost to society including.         Dut not limited to, costs to the building user, the environment and energy networks (as defined to heads for the ABCS Housing Provisions Standard).           Exposure         see exposure category exposure         see exposure category is the modelling, and coean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with new obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush locks, elvested units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. at/wall in dustria frag.         description of the abstructions as a similar height e.g. gaass, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           National Construction Code         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 10 buildings. Definitions can be found at www.hock.gov.au.           Provisional value         a home that achieves a net zero energy value*.         Corporate on the cargority or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions. In the caracity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the cargority or size of equipment that is recommende	EER	
Entry value         defined in the ABCB Housing Provisions Standard).         Exercise           Entrance door         these signify ventilated corridor in a Class 2 building.           Exposure         see exposure category exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Provisional shading feature         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           National Construction Code         the National Construction Code         the National Construction Code           Net zero home         a home that achivers on an etar zero energy value*           Provisional value         an assumed value that does on or expresent an actual value. Acceptable provisional values are outlined in the NatHERS to home an assumed value that does on or size or earnple. If the wall colour is unspecified in the documentation, and case and the wall actacher or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified           Reflective wrap (also known as roof light) for NatHERS to is is typically a moulded unit with River Mercina values eves.         services, and generally does not have a diffuser.           Skylight (aliso kn	Energy use	
Entranse dool         ventilated corridor in a Class 2 building.           Exposure         see exposure category – exposed           Exposure category – open         see exposure category – open           Exposure category – open         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 no obstructions de 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 – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. situan housing, heavily vegetated bushland areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. situan industrial areas.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         the openability percentage or oprable (moveable) area of doors or windows that is used in ventilation calculations.           Recommended capacity         an assumed value that does not represent an actual value. Acceptable provisional value and a www. nathers.gov.au           Reflective wrap (also known as roof lights) for NatHERS this is typically an operable (moveable). Acceptable provisional value are outlined in the NatHERS technical Note space.           Shading features         includes neightowing buildings, fences, and wing walls, but excludes eaves.           <	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m.e.g. uburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Motizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moves) buildings. Definitions can be found at www.abcb.gov.au.           Recommended capacity         a nome that achieves a net zero energy value*.           Reflective wrap (also known as roof lingh) due to due of meduim must be modelled. Acceptable provisional value and save and assigns a classification scing should be confirmed by a suitably qualified person.           Reflective wrap (also known as roof lingh) due by operable (moveable) area of doors or window with an appropriate airgap and emissivity value, it provides finding features           Shading features         includes neighbouring buildings, fences, and wing wealls, but excludes aves.           Skylig	Entrance door	ventilated corridor in a Class 2 building.
Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 boundings. Definitions can be found at www.abcl.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Provisional value         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a prisional value of une of time wanters.gov.au           Net zero home         an assumed value that does not represent mactual value. For example, if the wall colour is unspecified in the documentation, a previsional value are function and the final selection sizing should be confirmed by a suitably qualified properties.           Recommended capacity         rsize are open wanter is gov.au           this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired orminot conditions in the zone or oser serviced. This is a recommendation and the final	· · · · · · · · · · · · · · · · · · ·	
Exposure category – protected         scattered sheas, lignty vegetated bush blocks, elevated units (e.g. above 3 hoors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         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 tatched Class 10a buildings. Definitions can be found at www.abch.gov.au.           Provisional value         a home that achieves a net zero energy value*.           Provisional value         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a nassumed value that does not represent an actual value, for example, if the wall colour is unspecified in the documentation, a not with must be modelled. Acceptable provisional values of not at the documentation, a nassumed value that does not represent an actual value, is to achieve the desired comfort conditions in the zon or zones seriviced. This is a recommended by NattHERS to achieve the desire	Exposure category – exposed	
Exposure category - suburban         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.hathers.gov.au.           Recommended capacity         zize of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or or serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as foll)         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.           Stading features         includes neighbouring buildings, fences,	Exposure category – open	scattered sneds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically an operable window (i.e. can be opened), will have a diffuser at ceiling level.           Store         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 Regulator (CER) as polystyreme insulation sheeling or have a simber batters greater than or equal to 20mm thick or continuous thermal breaks such as polystyreme insulation sheelin		
National Construction Code (NCC) class         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 10 a 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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, and can be found at www.nathers.gov.au           Recommended capacity         and can be found at www.nathers.gov.au           Reflective wrap (also known as foll)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Raof 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, forces, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level.           Solar heat gain coefficient (SHGC)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at well as absorbed a	Exposure category – suburban	
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         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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Start gain coefficient (SHGC)         The fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat gain coefficient (SHGC)           Strall         The fracton of incident solar radiation admitted through a window, both di	Horizontal shading feature	from upper levels.
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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and wubequiption doub a solar operator between 0 and 1. The lower a window's SHGC, the less solar heat if transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           are materials with an R-value greater than or equal to 0.2 th	(NCC) Class	
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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         StGS       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 Regulator (CER)         are materials with an R-value greater than or equal to 0.2. that must separate the metal frame from the cladding. This includes, such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such		07
Provisional value       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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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 ransmits.         STCs       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 Regulator (CER)         U-value	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u - conditioned       a zone within a dwelling that is assumed to not requ	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         urremationed       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         provi	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Rtor window         space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         privacy screens, other walls in the building (wing walls), hences, other buildings, vegetation (protected or listed heritage hereise).	Reflective wrap (also known as foil)	
Skylight (also known as roof lights) for NatHERŠ this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and solat as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fonces, other buildings, vegetation (protected or listed heritage trees).         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	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.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Shading features	
Strandard game coefficient (SHGC)       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.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Show         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>+</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Solar heat gain coefficient (SHGC)	subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading dovice Window shading dovice Window shading dovice	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0009176074

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

#### Address

Lot/DP NCC class Floor/all Floors Type

Unit 5, 1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 1a G of 1 floors New Home

#### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 50.2 0.0 Unconditioned\* Total 50.2 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley

onflicts



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conf
	<ol> <li>The second s second second se second second sec second second sec</li></ol>

## NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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

The more stars the more energy efficient

# NATIONWIDE

## 43.8 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
lodelled	14.0	29.9
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	0303
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

### 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 hstar.com.au/QR/Generate? p=RjHbCcIPX When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost





#### 7.7 Star Rating as of 11 Jan 2024

Certificate check	Approva	I Stage	Constru Stage	ction	HOUSE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					



0009176074 Nathers Certificate 7.7 Star Rating as of 11 Jan 2024					HOUSE	
	Approva	al Stage	Constru Stage	ction		
Certificate check	lecked	thority/ ecked	ked	thority ecked	Other	
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other	
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)		
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 Hom	e perform	ance asse	ssment is i	not conduc	ted)	
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)			
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						
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add	itional requi	rements that	t 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

Downlights must not penetrate ceiling insulation.



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
willdow iD	Description	U-value*	SHGC"	SHGC lower limit	SHGC upper limit
No Data Availa	able				

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W2	2400	2400	Sliding	65	S	No
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	No
Kitchen/Living	ALM-001-04 A	W4	1500	900	Awning	90	S	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No

## Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description	U-value*	3160	SHGC lower limit	SHGC upper limit
No Data Available					



Custom roof windows\*

Window ID	Window	Maximum	SHCC*	Substitution to	lerance ranges
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Avai	lable				

## 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
 Skylight shaft reflectance

 No Data Available
 Volume
 Volum
 Volume
 Volume

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser	
No Data Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

#### External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3895	S	1800	No
Kitchen/Living	EW-1	2700	2000	W	1100	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No

0009176074 NatHERS Certificate

7.7 Star Rating as of 11 Jan 2024

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]	
Bath	EW-1	2700	1800	Ν	1600	No	

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	29.70	No insulation
IW-002	Stud, plasterboard	24.03	Bulk Insulation in the centre R2
IW-003	Stud, plasterboard	4.32	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Concrete Slab on Ground 100mm	11.61	None	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab on Ground 100mm	28.76	None	No Insulation	Cork Tiles or Parquetry 8mm
Ldry	Concrete Slab on Ground 100mm	3.63	None	No Insulation	Ceramic Tiles 8mm
WC	Concrete Slab on Ground 100mm	1.94	None	No Insulation	Ceramic Tiles 8mm
Bath	Concrete Slab on Ground 100mm	4.27	None	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Ldry	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
Kitchen/Living	5	Downlights - LED	0	Sealed
Ldry	2	Downlights - LED	0	Sealed

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 5, 1 Phillip St , Goonellabah , NSW , 2480

0009176074 NatHERS Certi	ficate	7.7 Star Rating as of 11 Jan 2024			HOUSE
Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed	
WC	1	Downlights - LED	0	Sealed	
Bath	1	Downlights - LED	0	Sealed	

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]
None Present			

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Lo	cation	Fuel type	eff	iciency/		mended acity
Lo	cation	Fuel type	eff	iciency/		mended acity
Fuel type	Hot Water	Minimum efficiency	Zone 3			Assessed daily load
	CER Zone	e /STC		lower limit	upper limit	[litres]
	Lo	Location Hot Fuel type Water	Location Fuel type Hot Minimum Fuel type Water efficiency	Location Fuel type eff perf Location Fuel type eff perf Hot Minimum Fuel type Water efficiency Zone 3 STC	Location     Fuel type     efficiency/ performance       Location     Fuel type     Minimum efficiency/ performance       Hot     Minimum efficiency     Zone 3 STC	Location     Fuel type     efficiency/ performance     cap       Location     Fuel type     Minimum efficiency/ performance     Recom cap       Hot     Minimum efficiency     Cap       Fuel type     Hot     Minimum efficiency     Zone 3       STC     Zone 3 Substitution tolerance ranges

Minimum Appliance/ system type Fuel type efficiency/	0009176074 NatHERS Certificate	7.7 Star Rating as of 11 Jan 2024	
Appliance/ system type Fuel type efficiency/	Pool/spa equipment		
	Appliance/ system type	Fuel type	

## Onsite Renewable Energy Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

## Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	

Recommended capacity



#### **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<sup>\*</sup>.

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 Assessed floor area the floo fea	Istralian Fenestration Rating Council e predicted amount of energy required for heating and cooling, based on standard occupancy assumptions. e floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Assessed floor area the floor fea	e floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
fea	or area in the design documents.
Ceiling penetrations Exe	atures that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. cludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and ating and cooling ducts.
	pefficient of performance
Conditioned a z circ	zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some cumstances it will include garages.
Scl	ndows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating
	ndows that are representative of a specific type of window product and whose properties have been derived by statistical ethods.
EER En	nergy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity but
	is is your homes rating without solar or batteries.
def	e net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as fined in the ABCB Housing Provisions Standard).
Ver Ver	ese signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ntilated corridor in a Class 2 building.
	e exposure categories below.
	rain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
	rain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with attered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
	rain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
	rain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shauling leature from	ovides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies m upper levels.
National Construction Code the (NCC) Class Cla	e NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC ass 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
	nome that achieves a net zero energy value*.
	e openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value a p and	assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note d can be found at www.nathers.gov.au
Recommended capacity zor	s is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the ne or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified rson.
Reflective wrap (also known as car foil)	n be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides sulative properties.
Roof window for spa	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 ace, and generally does not have a diffuser.
Shading features inc	cludes neighbouring buildings, fences, and wing walls, but excludes eaves.
	NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
(SHGC) sub	<ul> <li>fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and bsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar at it transmits.</li> </ul>
	nall-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be ught and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
Thermal breaks but	e materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, t is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such polystyme insulation sheeting or plastic strips
U-value the	e rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
	zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features pro	ovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes vacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device device device	vice fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading atures* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176066

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

#### Address

Lot/DP NCC class\* Floor/all Floors Type Unit 6, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

#### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

#### Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation 24
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

Thermal performance Star rating

5.5 The more stars the more energy efficient

## NATIONWIDE HOUSE ENERGY RATING SCHEME

## 75.9 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	30.8	45.1
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

### 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 hstar.com.au/QR/Generate? p=ozpfcSMHE . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.5 Star Rating as of 11 Jan 2024

····· ··· ··· ··· ··· ··· ··· ··· ···					HOUSE
Certificate check	Approva	I Stage	Constru Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	Conser Survey	Builder	Conser Survey	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		r	r		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176066 NatHERS Certificate       5.5 Star Rating as of 11 Jan 2024	I				HEATER
	Approva	I Stage	Constru Stage	ction	
Certificate check	cked	ority/ ked	pe	ority :ked	her
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	ssment)	
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 Hom	e performa	ance asses	ssment is i	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	nent)	o	
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**

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

Downlights must not penetrate ceiling insulation.



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	ion tolerance ranges	
	Description	U-value*		SHGC lower limit	SHGC upper limit	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window			Substitution tolerance ranges	
Window ID	Description			SHGC lower limit	SHGC upper limit
No Data Avail	able				

#### Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W2	2400	2400	Sliding	45	W	No
Kitchen/Living	ALM-002-04 A	W3	2400	3200	Sliding	65	W	Yes
Kitchen/Living	ALM-002-04 A	W4	2400	2700	Sliding	65	Ν	No
Bed 2	ALM-002-04 A	W11	2400	2100	Sliding	65	W	No

## Roof window\* type and performance value

#### Default roof windows\*

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



Custom roof windows\*

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

## 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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser	
No Data Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	E

#### External wall type

Wall Wall		Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	W	300	No
Bed 1	EW-1	2700	3695	S	1000	No
WC	EW-1	2700	1090	S	1000	No
Bath	EW-1	2700	1800	E	1200	No

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5.5 Star Rating as of 11 Jan 2024



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bath	EW-1	2700	2295	S	1000	No
Kitchen/Living	EW-1	2700	1100	S	3300	No
Kitchen/Living	EW-1	2700	4000	W	300	Yes
Kitchen/Living	EW-1	2700	4200	Ν	3300	No
Kitchen/Living	EW-1	2700	3995	Е	1200	No
Bed 2	EW-1	2700	3295	W	3200	Yes

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ] Bull	k insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93 No i	insulation
IW-002	Stud, plasterboard	24.84 Bull	< Insulation in the centre R1

## Floor type

Location	Construction	Area [m <sup>2</sup> ]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Concrete Slab on Ground	11.52	None	No	Carpet+Rubber Underlay
Bod I	100mm	11.02	Nono	Insulation	18mm
WC	Concrete Slab on Ground	1.94	None	No	Ceramic Tiles 8mm
VVC	100mm	100mm		Insulation	
Bath	Concrete Slab on Ground	4.09	None	No	Ceramic Tiles 8mm
Dalli	100mm	4.09	None	Insulation	
Ldry/Hall	Concrete Slab on Ground	4.99	None	No	Ceramic Tiles 8mm
Lui y/Hali	100mm	4.99	None	Insulation	
Kitaban/Living	Concrete Slab on Ground	32.65	None	No	Cork Tiloo or Dorguotry 9mm
Kitchen/Living	100mm	32.05	None	Insulation	Cork Tiles or Parquetry 8mm
Bed 2	Concrete Slab on Ground	12 14	None	No	Carpet+Rubber Underlay
Deu Z	100mm	100mm 13.14		Insulation	18mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	

0009176066 NatHERS Certificate		5.5 Star Rating a	HOUSE .	
Location	Construction material/type		Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 2	Plasterboard on	Timber	Bulk Insulation R1	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

## 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  $5W/m^2$  is used for lighting, therefore lighting is not included in the appliance schedule.

0009176066 NatHERS Certificate	5.5 Sta	r Rating as of <sup>2</sup>	11 Jan 2024				HISON
Cooling system							
Appliance/ system type	Lo	cation I	Fuel type	eff	inimum iciency/ <sup>c</sup> ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation I	Fuel type	eff	inimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							
Onsite Renewable Er	nergy Sch	edule					
System Type Orie	ntation		Syst	em Size O	r Generation	Capacity	

## Battery Schedule

No Data Available

System Type	Size [Battery Storage Capacity]
No Data Available	



#### 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<sup>\*</sup>.

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 floor area modelled in the software for the haing and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area in the design documents.           Ceiling penetrations         Extract the design documents.           Ceiling penetrations         Extract the design documents.           Common the design documents.         Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Excludes intures attached to the ceiling, including downights, vents, exhaust fans, range hoods, chinneys and flues.           Coefficient of performance         externs that attached to the ceiling including downights, vents, exhaust fans, range hoods, chinneys and flues.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rains.           Default windows         windows intat are expresentative of a specific type of window product and whose properties have been derived by statistical energy value           Energy theorem that are expresentative of a specific type of window gradue and must not be modelled as a door whorks (as defined in the AGE Housing Provisions Standard).           Entrance door         The net cost to societly including, but not limited to, costs to the building user, the environment and energy networks (as defined in the AGE Housing Provisions Standard).           Exposure category - open         terrain with no obstructions below Tom e.g. suburban Housing, heavily venilation b	AFRC	Australian Fenestration Rating Council
Assessed floor area         Interfact of the particles           Ceiling penetrations         Eastward to design documents.           Ceiling penetrations         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Condition to design documents.         Eastward to explore the design documents.           Conditioned         a zone within a develing this supected to require heating and cooling based on standard occupancy assumptions. In some dricumstances it will include garages.           Custom windows         gindows listed in NaHE-RSS Salware that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         mithods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy value         This is your homes rating without solar or batteries.           Energy value         This is your homes rating without solar or batteries.           Energy value         The net cost to solary to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category – open         terrain with no bastructions e.g. flig trazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely papeed obstructions lowerit on e.g. clip a		
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupacy assumptions. In some drammatices if will include garages.           Custom windows         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           Default windows         Window 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 walue         The net cost to society including, but not innited to costs to the building user, the environment and energy networks (as these signify vontilation benefits in the modelling software and must not be modelled as a door when opening to a minimally vertilated corridor in a class 2 building.           Exposure category - sposed         terrain with no obstructions eleo.           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as therain with no obstructions eleo.           Exposure category - portexted by exposed big regramation with scattered sheads. lightly vegetated bush block, elevated units (e.g. above 3 loors).           Exposure category - portexted by spaced obstructions below. The environment and energy networks (as there how about any environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks (as therain with numerous, closely spaced obstructions below. The environment and energy networks and anothot acting a settered sheads.		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows 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.           ERR         Energy Lifeliency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity.           Energy value         Thes is your homes rating without solar or batteries.           Entrance door         the ABCE Housing Provisions Standard).           Exposure category – exposed         terrain with no obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with few obstructions are or protected.           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. edva and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions cere be found at www.acephowethow the scheme of the scategre of a building in th	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.
Curronitational         circumstances it will include garages.         Image: Section 2016           Custom windows         windows tletcl in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.         windows that are representative of a specific type of window product and whose properties have been derived by statistical products.           EER         Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Energy value         The net cost o society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category = exposed         Exposure category = exposed           Exposure category = protected         train with no costructions e dow dware and must not be modelled as a door when opening to a minimally verifitation becase / building.           Exposure category = protected         terrain with nomerous, closely spaced obstructions below Tom, farmland with scietaria with numerous, closely spaced obstructions below Tom e, g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhangs or balconies from uppartial with market and tatched Class 1.0b building. Definitions can be found at www.bdb.gov.au.           National Construction Code (NCC) Class 1. Code Juilding in the horizontal plane, e, g. eaves, verandahs, perglas, caports, or overhan	COP	Coefficient of performance
Classifier         Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           ERR         Energy Ufficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           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 ABCE Housing Provisions Standard).           Entrance door         the net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no bostructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – ponel         seatered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. above 3 floors).           Not actional shading feature         The openability percentage or operable (moveable) area of doors on windows that is used in ventilation calculations.           Not actional value th does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of the comentation, a provisional value of medium must be modelled. Accceptable provisional values a	Conditioned	circumstances it will include garages.
Details withows         methods.           EER         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 ABCE 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 Cast 2 building.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Horizontal shading feature         The openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anstitonal Construction Code         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Anome that achieves a net zero energy value.         on windows that is used in ventilation calculations.           An asyme they developed the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An some that achieves	Custom windows	
LLK         input <sup>2</sup> Energy value         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 Frovisions 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         see exposure categories below.           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no cobstructions e.g. dist down flow solar dobstructions or e.g. suburban housing, heavily vegetated bushand areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         a home that achieves a net zero energy value <sup>*</sup> .           Provisional value         crab engiption that is cocommended by Nati-ERS to achieve the desired comfort conditions. a nassumed value that does nor represent an actual value. For example, if the wa	Default windows	
Energy value         The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined to heads for building.           Entrance door         The net cost to society including.         Dut not limited to, costs to the building user, the environment and energy networks (as defined to heads for the ABCS Housing Provisions Standard).           Exposure         see exposure category exposure         see exposure category is the modelling, and coean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with new obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush locks, elvested units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. at/wall in dustria frag.         description of the abstructions as a similar height e.g. gaass, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           National Construction Code         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 10 buildings. Definitions can be found at www.hock.gov.au.           Provisional value         a home that achieves a net zero energy value*.         Corporate on the cargority or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions. In the caracity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the cargority or size of equipment that is recommende	EER	
Entropy value         defined in the ABCB Housing Provisions Standard).         Exercise           Entrance door         these signify ventilated corridor in a Class 2 building.           Exposure         see exposure category exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Provisional shading feature         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           National Construction Code         the National Construction Code         the National Construction Code           Net zero home         a home that achieves and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.           Net zero home         a home that achieves provau.           Provisional value         an assumed value that does on or present an actual value. Acceptable provisional values are outlined in the NatHERS to chronical Volues from size areas for an actual value. Core example, if the wall colour is unspecified in the documentation, and case to an one provau.           Recommended capacity         provisional value area and that does on or windows that is used in ventilation calculations.           Reflective wrap (also known as rovi ligh	Energy use	
Entranse dool         ventilated corridor in a Class 2 building.           Exposure         see exposure category – exposed           Exposure category – open         see exposure category – open           Exposure category – open         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 no obstructions del similar height e.g. grasslands with few well scattered obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Morizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from Upper levels.           Net zero home         a home that achieves a net zero energy value <sup>*</sup> .           Opening percentage         the openability percentage or oprable (moveable) area of doors or windows that is used in ventilation calculations.           Recommended capacity         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value or or zize of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or ozoes serviced. This is a recommended by nat PCP will well well well will well well will well we	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m.e.g. uburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Motizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moves) buildings. Definitions can be found at www.abcb.gov.au.           Recommended capacity         a sumet 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 value are suitably qualified person.           Reflective wrap (also known as roof light) does not represent an actual value. For example, if the wall colour is unspecified in the documentation, and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as roof light)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and em	Entrance door	ventilated corridor in a Class 2 building.
Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 boundings. Definitions can be found at www.abcl.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Provisional value         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a prisional value of une of time wanters.gov.au           Net zero home         an assumed value that does not represent mactual value. For example, if the wall colour is unspecified in the documentation, a previsional value are function and the final selection sizing should be confirmed by a suitably qualified properties.           Recommended capacity         rsize are open wanter is gov.au           this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired orminot conditions in the zone or oser serviced. This is a recommendation and the final	· · · · · · · · · · · · · · · · · · ·	
Exposure category – protected         scattered sheas, lignty vegetated bush blocks, elevated units (e.g. above 3 hoors).           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           National Construction Code (NCC) Class         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         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 tatched Class 10a buildings. Definitions can be found at www.abch.gov.au.           Provisional value         a home that achieves a net zero energy value*.           Opening percentage         the NCC groups buildings to the building in the bordelide Acceptable provisional values of unvelation.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a rowisional value of unvelative sigov.au.           Recommended capacity         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Syalight (also known as roof lights) for NatHERS toiar radiation admitted through, since, and generally does not have a diffuser.	Exposure category – exposed	
Exposure category - suburban         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.hathers.gov.au.           Recommended capacity         zize of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or or serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as foll)         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.           Stading features         includes neighbouring buildings, fences,	Exposure category – open	scattered sneds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically an operable window (i.e. can be opened), will have a diffuser at ceiling level.           Store         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 Regulator (CER) as polystyreme insulation sheeling or have a simber batters greater than or equal to 20mm thick or continuous thermal breaks such as polystyreme insulation sheelin		
National Construction Code (NCC) class         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 10 a 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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, and can be found at www.nathers.gov.au           Recommended capacity         and can be found at www.nathers.gov.au           Reflective wrap (also known as foll)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Raof 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, forces, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level.           Solar heat gain coefficient (SHGC)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at well as absorbed a	Exposure category – suburban	
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         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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Start gain coefficient (SHGC)         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 Regulator (CER)           Thermal breaks         ut is not materials with an R-value greater than or equal to 0.2 that must separate the metal fr	Horizontal shading feature	from upper levels.
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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and wubequiption doub a solar operator between 0 and 1. The lower a window's SHGC, the less solar heat if transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           are materials with an R-value greater than or equal to 0.2 th	(NCC) Class	
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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         StGS       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 Regulator (CER)         are materials with an R-value greater than or equal to 0.2. that must separate the metal frame from the cladding. This includes, such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such		07
Provisional value       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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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 ransmits.         STCs       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 Regulator (CER)         U-value	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u - conditioned       a zone within a dwelling that is assumed to not requ	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         ure 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u conditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         provides shading to the building	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Rtor window         space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)           Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         privacy screens, other walls in the building (wing walls), hences, other buildings, vegetation (protected or listed heritage hereise).	Reflective wrap (also known as foil)	
Skylight (also known as roof lights) for NatHERŠ this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and solat as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fonces, other building, vegetation (protected or listed heritage trees).         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading <td>Roof window</td> <td>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.</td>	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.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Shading features	
Strandard game coefficient (SHGC)       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.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Show         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>+</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Solar heat gain coefficient (SHGC)	subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading dovice Window shading dovice Window shading dovice	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176215

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 7, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone

9 Amberley



#### Accredited assessor

David Howard
Partners Energy Management
david@partnersenergy.com.au
0421381005
20039
nisation
Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

Thermal performance Star rating

The more stars the more energy efficient

## NATIONWIDE HOUSE ENERGY RATING SCHEME

## 73.1 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	28.9	44.3
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	CSUG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

### 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 hstar.com.au/QR/Generate? p=oenYGHgAd . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.7 Star Rating as of 11 Jan 2024

					HOUSI
Certificate check	k Approval Stage				
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176215 NatHERS Certificate       5.7 Star Rating as of 11 Jan 2024					HOUSI
	Approva	I Stage	Constru Stage	ction	
Certificate check	ecked	hority/ ecked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	ssment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessr	nent)		
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**

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

Downlights must not penetrate ceiling insulation.



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum SHGC*		* Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
GJA-070-38 A	Type 245 Aluminium Sliding Door SG 638SctGn	4.4	0.42	0.40	0.44

## Window and glazed door schedule

Window ID	Window no.	Height [mm]			Opening %	Orientation	Window shading device*
ALM-002-04 A	W2	2400	2400	Sliding	45	W	Yes
GJA-070-38 A	W3	2400	3200	Sliding	65	W	Yes
GJA-070-38 A	W4	2400	2700	Sliding	65	Ν	No
ALM-001-04 A	W1	2400	900	Louvre	90	E	No
ALM-002-04 A	W11	2400	2100	Sliding	65	W	No
ALM-001-04 A	W8	600	2100	Awning	90	Ν	No
	ID ALM-002-04 A GJA-070-38 A GJA-070-38 A ALM-001-04 A ALM-002-04 A	ID         no.           ALM-002-04 A         W2           GJA-070-38 A         W3           GJA-070-38 A         W4           ALM-001-04 A         W1           ALM-002-04 A         W11	ID         no.         [mm]           ALM-002-04 A         W2         2400           GJA-070-38 A         W3         2400           GJA-070-38 A         W4         2400           ALM-001-04 A         W1         2400           ALM-002-04 A         W11         2400	ID         no.         [mm]         [mm]           ALM-002-04 A         W2         2400         2400           GJA-070-38 A         W3         2400         3200           GJA-070-38 A         W4         2400         2700           ALM-001-04 A         W1         2400         900           ALM-002-04 A         W11         2400         2100	ID         no.         [mm]         [mm]         type           ALM-002-04 A         W2         2400         2400         Sliding           GJA-070-38 A         W3         2400         3200         Sliding           GJA-070-38 A         W4         2400         2700         Sliding           ALM-001-04 A         W1         2400         900         Louvre           ALM-002-04 A         W11         2400         Sliding	ID         no.         [mm]         [mm]         type         %           ALM-002-04 A         W2         2400         2400         Sliding         45           GJA-070-38 A         W3         2400         3200         Sliding         65           GJA-070-38 A         W4         2400         2700         Sliding         65           ALM-001-04 A         W1         2400         900         Louvre         90           ALM-002-04 A         W11         2400         2100         Sliding         65	ID         no.         [mm]         [mm]         type         %         Orientation           ALM-002-04 A         W2         2400         2400         Sliding         45         W           GJA-070-38 A         W3         2400         3200         Sliding         65         W           GJA-070-38 A         W4         2400         2700         Sliding         65         N           ALM-001-04 A         W1         2400         900         Louvre         90         E           ALM-002-04 A         W11         2400         2100         Sliding         65         W



## Roof window\* type and performance value

Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges	
	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit
No Data Availa	able				
Custom roof w	indows*				
Window ID	Window	Maximum	01100*	Substitution to	lerance ranges
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Availa	able				
No Data Availa	able				

#### Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Avai	ilable							

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

### External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	E

## External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	W	300	No
Bed 1	EW-1	2700	2000	S	1000	No
Bath	EW-1	2700	1800	Е	1200	No
Bath	EW-1	2700	700	S	1000	No
Kitchen/Living	EW-1	2700	1100	S	3300	No
Kitchen/Living	EW-1	2700	4000	W	300	Yes
Kitchen/Living	EW-1	2700	4200	Ν	3300	No
Kitchen/Living	EW-1	2700	3995	Е	1200	No
Bed 2	EW-1	2700	3295	W	3200	No
Bed 2	EW-1	2700	4000	Ν	0	Yes

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93	No insulation
IW-002	Stud, plasterboard	22.41	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Suspended Concrete Slab 150mm	11.52	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm
WC	Suspended Concrete Slab 150mm	1.94	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Bath	Suspended Concrete Slab 150mm	4.09	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm

0009176215 NatHERS Certificate

5.7 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Ldry/Hall	Suspended Concrete Slab 150mm	4.99	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	32.65	Basement Carpark	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bed 2	Suspended Concrete Slab 150mm	13.14	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900

0009176215 NatHERS Certificate	5.7 Star Rating as of 11 Jan 2024			
Location	Quantity	Diameter [mm]	PRESERVE	
Kitchen/Living	2	1200		
Bed 2	1	900		

# Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

# 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

### Cooling system

Appliance/ system type	Lo	cation F	uel type	eff	officiency/		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ iormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type	Fuel type		Minimum efficiency/ performance		Recommended capacity		
No Data Available							



# **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

# **Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



### 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.

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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.

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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.

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### Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
<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.
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.
Skylight (also known as roof lights	
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0009176173

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

### Address

Lot/DP NCC class Floor/all Floors Type

Unit 8, 1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

# Construction and environment

### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone

onflicts

9 Amberley



### ccredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conf

# NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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

The more stars the more energy efficient

# NATIONWIDE

# 64.8 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
Aodelled	24.6	40.2
oad limits	N/A	N/A

### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

# 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 hstar.com.au/QR/Generate? p=plmHBgyPb When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

### Energy use



Greenhouse gas emissions



Cost



### 6.1 Star Rating as of 11 Jan 2024

Certificate check	Approva	I Stage	Constru Stage	ction	HOUSE
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Asses	Conse Surve	Builde	Conse Surve	Occup
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

### 6.1 Star Rating as of 11 Jan 2024

6	-
6	13
3900	
HQ	991

	Approva	l Stage	Construe Stage	ction	
Certificate check	ecked	hority/ scked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	ment)		
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC Addi	tional requi	rements the	t must also	he estisfied	include

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

Downlights must not penetrate ceiling insulation.



# Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

### Default windows\*

Window ID	Window	Maximum SHGC*		Substitution tolerance ranges		
Description		U-value*		SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

### Custom windows\*

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

# Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W6	1500	2400	Awning	90	Ν	No
Kitchen/Living	ALM-001-04 A	W10	2400	900	Louvre	90	S	No
Kitchen/Living	ALM-002-04 A	W8	2400	2700	Sliding	45	W	No
Kitchen/Living	ALM-001-04 A	W9	1500	3200	Awning	90	Ν	No
Bed 2	ALM-002-04 A	W7	2400	2700	Sliding	65	Ν	No



# Roof window\* type and performance value

Default roof windows\*

Window ID	Description	U-value*	SHGC*			
	= • · ·	0-value		SHGC lower limit	SHGC upper limit	
No Data Availab	le					
Custom roof win	dows*					
Minday ID	Window	Maximum	01100*	Substitution tolerance ranges		
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Availab	ble					

# 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		Skylight shaft reflectance
No Data Available		

# Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

# External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	S

# External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	Ν	0	Yes
Bath	EW-1	2700	1800	S	1300	No
Bath	EW-1	2700	400	W	13200	No
Ldry/Hall	EW-1	2700	1490	S	1700	No
Kitchen/Living	EW-1	2700	400	E	4300	No
Kitchen/Living	EW-1	2700	3995	S	1300	No
Kitchen/Living	EW-1	2700	4200	W	5400	No
Kitchen/Living	EW-1	2700	4000	Ν	0	No
Kitchen/Living	EW-1	2700	1100	E	0	No
Bed 2	EW-1	2700	3295	S	1300	No
Bed 2	EW-1	2700	1000	W	2100	No
Bed 2	EW-1	2700	3295	Ν	3100	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	17.28	Bulk Insulation in the centre R1
IW-002	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Suspended Concrete Slab 150mm	11.52	Basement Carpark	Bulk Insulation in Contact with Floor R1	<sup>1</sup> Carpet+Rubber Underlay 18mm
WC	Suspended Concrete Slab 150mm	1.94	Basement Carpark	Bulk Insulation in Contact with Floor R1	ו Ceramic Tiles 8mm

0009176173 NatHERS Certificate

6.1 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	Suspended Concrete Slab 150mm	4.09	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Ldry/Hall	Suspended Concrete Slab 150mm	4.99	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	32.65	Basement Carpark	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bed 2	Suspended Concrete Slab 150mm	13.14	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed



# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

# 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

### Cooling system

Appliance/ system type	Lo	cation	Fuel type	eff	inimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation	Fuel type	eff	inimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zon	Minimum efficiency e /STC	Zone 3 STC		<b>bstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							

0009176173 NatHERS Certificate	6.1 Star Rating as of 11 Jan 2024		NESTRE .
Pool/spa equipment			
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			
Onsite Renewable Ene	rgy Schedule		

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

# Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



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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.           Assessed floor area         the floor area in the design documents.           Colling penetrations         features that require a penetration to the calling, including downlights, vents, exhaust fans, range hoods, chinneves and flues. Exhausta fans trange hoods, chinneves and flues.           Coll         Coefficient of performance         expected to require a penetration to the calling with small holes through the calling for winning, e.g. calling fans, pendari lights, and corumstances twill include grages.           Custom windows         windows fleted in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           Energy Efficiency Ratio, measure of now much cooling can be achieved by an air conditioner for a single KWh of electricity fund in a two flow to solity in the individing user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Entrance door         these singlify ventiliation benefits in the modelling flow and must not be modelled as a door when opening to a minimally ventiliated corridor in a class 2 building.           Exposure category – exposed         terrain with numerous, closely spaced obstructions bown 10 meas.           Exposure category – protected         terrain with numerous, closely spaced obstructions bown 10 meas.           Exposure category – protected         terrain wi	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 coiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Evolutes flutwes attached to the ceiling with an all hoes intrough the cailing for wiring, e.g. ceiling fans, bundard (bits, software).           COP         Coefficient of performance         a converting with a welling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Windows, listen in NatHERS Software that are available on the market in Australia and have a WERS (Window Energy Rating Schemer) rating. 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).           Energy value         The site your homes rating without solar or batteries.           Energy value         The exposure category protected by a site of the obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (sually above 10 floors).           Exposure category - ponet         serial asymptic functions as a similar height e.g. grasslands with five well scattered obstructions below 10m, farmalnal with scattered obstructions e.g. dia grazing land, ocean-frontage, desert, exposed high-rise unit (sually above 10 floors).           Exposure category - ponet         terrain with numerous, closely spaced obstructions to vort 10m e.g. althy and thousing, heavily		M. A Contract of the second seco
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Expension of the construction construction of the construction of the constructio	<u> </u>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         Windows 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 lippl.           Energy value         The is south homes rating without solar or botteries.           Energy value         The haRCB Housing Provisions Standard).           Exposure category – exposed         Iterain with no obstructions as a Standard).           Exposure category – protected         terrain with no obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions below 10m, farmland with scattered obstructions below 10m e.g. city and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. diva and industrial areas.           Motzontal shading feature         the NCC groups buildings of their horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs o	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.
Continuined         circumstances it will include garages.           Custom windows         windows listed in NaHERS 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 provides.           ER         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).           Exposure category - exposed         these signify ventilation beenefits in the modelling software and must not be modelled as a door whon opening to a minimally ventilated corridor in a Class 2 building.           Exposure category - protected         terrain with numerous, closely spaced obstructions below On e.g. asburban housing, heavity vegetated bushland areas.           Exposure category - protected         terrain with numerous, closely spaced obstructions below On e.g. asburban housing, heavity vegetated bushland areas.           Exposure category - protected         terrain with numerous, closely spaced obstructions below Tom, terrain with numerous, closely spaced obstructions below Tom, terrain with numerous, closely spaced obstructions below Tom e.g. avan industrial areas.           Provisional Construction Code (NCC) Class 1, 20 4 buildings or operable (movable) area of doors or windows that is used in ventilation, calculations. an assumed value that des no trepresent an	COP	Coefficient of performance
Clusterin windows         Scheme) 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 2Fficiency 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).           Exposure         see exposure category exposed         terrain with no bestructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usualy above 10 floors).           Exposure category – ponet         seatered sheds, lightly vegletated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – ponet         terrain with numerous; closely spaced obstructions below 10m e.g. above 3 floors).           Exposure category – ponet         terrain with numerous; closely spaced obstructions e.g. and sasigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings the the ritorian and use, part a subjectified in the documentation, and subjectified bushliding. Definitions can be found at www.abcb gov.au.           Not torial shading feature         how chart category or porable (moveable) area of doors owindows that is used in ventilation calculations.           Provisional value         a home th	Conditioned	circumstances it will include garages.
Detail windows         methods.           EER         Energy use         This is your homes rating without solar or batteries.           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 ABCE Housing Provisions Standard).           Entrance door         these signify ventilation banefits in the modelling software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase corridor in a Cast's building, software and must not be modelled obstructions below 10 floors).           Exposure category – portected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Horizontal shading feature         Provisional shading, the building in the horizontal plane, e.g. eaves, venadam, pergolas, carports, or overhangs or balconles with a does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of the openablik percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Provisional value         a home thau calvieves an actual va	Custom windows	
LER         input <sup>T</sup> 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 vertilation 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 – exposure category – open         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 no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no obstructions e.g. and grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentent that is recommended by Nati-ERS to achieve the desired comfort on dillos.           Provisional value         the odgenability bercentent that is recommended	Default windows	
Energy value         The net cost is 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 – exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open terrain with new obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheets, lightly vegetated bush blocks, develated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. cluburban housing, heavily vegetated bushland 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.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operalet (moveabile) area of doors or windows that is used in ventilation calculations.           Recommended capacity         a source trade or openability percentage or operalet (were able) area of doors or windows that is used in ventilation calculations.           Reflective wrap (also known as includes and atcheves and trade or the disting dowere able) area of doors or windows that is used in ventilation	EER	
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         see exposure category – exposed         terrain with no obstructions of a fair grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions of a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, effevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m 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 XCC 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 zoro home         a home that achieves a net zero energy value".           Provisional value         or must be modelled. Acceptable provisional values or oxample, 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 that gov.au.           Reflective wrap (also known as foil)         for NatHERS this is typically an operable window (i.e. can be opened)	Energy use	
Link are used         ventilated condor         ventilated condor           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions set as inflar height e.g. grasslands with few well scattered shstructions below 10m, farmland with scattered sheat units (e.g. above 3 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Notizonal Shading feature         provides shading to the buildings in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           NtCC) Class         1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www.abots.gov.au.           Nte zero home         a home that achieves a net zero energy value <sup>6</sup> .           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 or metage on values are outlined in the NatHERS technical Note and can be found at www.abaiters.gov.au.           Refeective wrap (also known as ror linght) for NatH	Energy value	
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Provisonal 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           Opening percentage         the one penabliki percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Provisional value         a home that achieves a net zero energy value*.           Provisional value         or set upinomentation, a provisional value. For example, if the wall colour is unspecified in the documentation, an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation.           Reflective wrap (also known as in the doal of value, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides for walls or value or set exerced. This is a recommendation and the final selection sizing should be confirmed by a suitably qual		ventilated corridor in a Class 2 building.
Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 buildings. Definitions can be found at www.abc.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moveabel) area of doors or windows that is used in ventilation calculations.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value         a provisional value           Reflective wrap (also known as icol area be found at www.athers.gov.au         this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or ories serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified spotential.           Reflective wrap (also known as roof lights) for NatHERS t		
Exposure category - protected       Exposure category - suburban         Exposure category - suburban       terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.         Provisoral 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 winthers.gov.au.         Recommended capacity       this is the capacity or size of equipment that is recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       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.         Skylight (also known as roof lights) <td< th=""><th>Exposure category – exposed</th><th></th></td<>	Exposure category – exposed	
Exposure category – suburban         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 (NCC) Class           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 model. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended by NatHERS to achieve the desired comfort conditions in the person.           Reflective wrap (also known as foll)         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.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and		scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. an assumed 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 as foil)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) 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 radifuser.           Stors         Small-scale Technology Certificates, certificates created by the Creagistry for renewable energy technologies that may be bought and sold as part of the Small-scc	<u>8</u> 21	
National Construction Code (NCC) Class       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. 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 foris 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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) 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, fonces, and wing walls, but excludes eaves.         Skylight (also known as roo	Exposure category – suburban	
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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable (mode) (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.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stoar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is ex		from upper levels.
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         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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stolar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subas part of the Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bo	(NCC) Class	
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 recommended by NatHERS to achieve the desired comfort conditions in the insulative properties.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stors       Small-scale Technology Certificates, 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 Regulator (CER)         are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy R		
Provisional value       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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.         STCs       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 Regulator (CER)         U-value       the rans	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         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 or continuous thermal breaks         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of hea	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
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Shading features       space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building (wing walls), hences, other buildings, vegetation (protected or listed heritage trees).         window shading device		
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fonces, other building, weigtation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awinings or screens but excludes horizontal* or ve	Roof window	space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		
StrCs       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.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       privides shading to the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).         window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Original         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>1</sup> Thermal breaks         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 polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
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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         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading device         Window shading device           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0009176173

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

### Address

Lot/DP NCC class Floor/all Floors Type

Unit 8, 1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

# Construction and environment

### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone

onflicts

9 Amberley



### ccredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conf

# NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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

The more stars the more energy efficient

# NATIONWIDE

# 64.8 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
Aodelled	24.6	40.2
oad limits	N/A	N/A

### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

# 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 hstar.com.au/QR/Generate? p=plmHBgyPb When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

### Energy use



Greenhouse gas emissions



Cost



### 6.1 Star Rating as of 11 Jan 2024

Certificate check	Approva	I Stage	Constru Stage	Construction Stage	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Asses	Conse Surve	Builde	Conse Surve	Occup
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

### 6.1 Star Rating as of 11 Jan 2024

6	-
6	13
3900	
HQ	991

	Approva	l Stage	Construe Stage	ction	
Certificate check	ecked	hority/ scked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	ment)		
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC Addi	tional requi	rements the	t must also	he estisfied	include

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

Downlights must not penetrate ceiling insulation.



# Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

### Custom windows\*

Window ID	Window	Maximum SHG0		Substitution tolerance ranges		
	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
No Data Availa	able					

# Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W6	1500	2400	Awning	90	Ν	No
Kitchen/Living	ALM-001-04 A	W10	2400	900	Louvre	90	S	No
Kitchen/Living	ALM-002-04 A	W8	2400	2700	Sliding	45	W	No
Kitchen/Living	ALM-001-04 A	W9	1500	3200	Awning	90	Ν	No
Bed 2	ALM-002-04 A	W7	2400	2700	Sliding	65	Ν	No



# Roof window\* type and performance value

Default roof windows\*

Window ID	Description	U-value*	SURCE		
	= • · ·	0-value	SHGC* SHGC lower limit		SHGC upper limit
No Data Availab	le				
Custom roof win	dows*				
Minday ID	Window	Maximum	01100*	Substitution to	lerance ranges
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Availab	ble				

# Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Avai	lable							

# 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Availa	able					

# External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	S

# External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	Ν	0	Yes
Bath	EW-1	2700	1800	S	1300	No
Bath	EW-1	2700	400	W	13200	No
Ldry/Hall	EW-1	2700	1490	S	1700	No
Kitchen/Living	EW-1	2700	400	Е	4300	No
Kitchen/Living	EW-1	2700	3995	S	1300	No
Kitchen/Living	EW-1	2700	4200	W	5400	No
Kitchen/Living	EW-1	2700	4000	Ν	0	No
Kitchen/Living	EW-1	2700	1100	E	0	No
Bed 2	EW-1	2700	3295	S	1300	No
Bed 2	EW-1	2700	1000	W	2100	No
Bed 2	EW-1	2700	3295	Ν	3100	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	17.28	Bulk Insulation in the centre R1
IW-002	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Suspended Concrete Slab 150mm	11.52	Basement Carpark	Bulk Insulation in Contact with Floor R1	<sup>1</sup> Carpet+Rubber Underlay 18mm
WC	Suspended Concrete Slab 150mm	1.94	Basement Carpark	Bulk Insulation in Contact with Floor R1	ו Ceramic Tiles 8mm

0009176173 NatHERS Certificate

6.1 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	Suspended Concrete Slab 150mm	4.09	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Ldry/Hall	Suspended Concrete Slab 150mm	4.99	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	32.65	Basement Carpark	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bed 2	Suspended Concrete Slab 150mm	13.14	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed



# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

# 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

### Cooling system

Appliance/ system type	Lo	cation	Fuel type	Minimum efficiency/ performance		Recommended capacity		
No Data Available								
Heating system								
Appliance/ system type	Lo	cation	Fuel type	Minimum efficiency/ performance		Recommended capacity		
No Data Available								
Hot water system								
Appliance/ system type	Fuel type	Hot Water CER Zon	Minimum efficiency e /STC	Zone 3 STC		<b>bstitution</b> e ranges upper limit	Assessed daily load [litres]	
No Data Available								

0009176173 NatHERS Certificate	6.1 Star Rating as of 11 Jan 2024		NESTRE .
Pool/spa equipment			
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			
Onsite Renewable Ene	rgy Schedule		

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

# Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



### 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.           Assessed floor area         the floor area in the design documents.           Colling penetrations         features that require a penetration to the calling, including downlights, vents, exhaust fans, range hoods, chinneves and flues. Exhausta fans trange hoods, chinneves and flues.           Coll         Coefficient of performance         expected to require a penetration to the calling with small holes through the calling for winning, e.g. calling fans, pendari lights, and corumstances twill include grages.           Custom windows         windows fleted in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           Energy Efficiency Ratio, measure of now much cooling can be achieved by an air conditioner for a single KWh of electricity fund in a two flow to solity in the individing user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Entrance door         these singlify ventiliation benefits in the modelling flow and must not be modelled as a door when opening to a minimally ventiliated corridor in a class 2 building.           Exposure category – exposed         terrain with numerous, closely spaced obstructions bown 10 meas.           Exposure category – protected         terrain with numerous, closely spaced obstructions bown 10 meas.           Exposure category – protected         terrain wi	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 coiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Evolutes flutwes attached to the ceiling with an all hoes intrough the cailing for wiring, e.g. ceiling fans, bundard (bits, software).           COP         Coefficient of performance         a converting with a welling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Windows, listen in NatHERS Software that are available on the market in Australia and have a WERS (Window Energy Rating Schemer) rating. 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).           Energy value         The site your homes rating without solar or batteries.           Energy value         The exposure category protected by a site of the obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (sually above 10 floors).           Exposure category - ponet         serial asymptic functions as a similar height e.g. grasslands with five well scattered obstructions below 10m, farmalnal with scattered obstructions e.g. dia grazing land, ocean-frontage, desert, exposed high-rise unit (sually above 10 floors).           Exposure category - ponet         terrain with numerous, closely spaced obstructions to vort 10m e.g. althy and thousing, heavily		M. A Contract of the second seco
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Expension of the construction construction of the construction of the constructio	<u> </u>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         Windows 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 lippl.           Energy value         The is south homes rating without solar or botteries.           Energy value         The haRCB Housing Provisions Standard).           Exposure category – exposed         Iterain with no obstructions as a Standard).           Exposure category – protected         terrain with no obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered obstructions below 10m, farmland with scattered obstructions below 10m e.g. city and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. diva and industrial areas.           Motzontal shading feature         the NCC groups buildings of their horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs o	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.
Continuined         circumstances it will include garages.           Custom windows         windows listed in NaHERS 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 provides.           ER         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).           Exposure category - exposed         these signify ventilation beenefits in the modelling software and must not be modelled as a door whon opening to a minimally ventilated corridor in a Class 2 building.           Exposure category - protected         terrain with numerous, closely spaced obstructions below On e.g. asburban housing, heavity vegetated bushland areas.           Exposure category - protected         terrain with numerous, closely spaced obstructions below On e.g. asburban housing, heavity vegetated bushland areas.           Exposure category - protected         terrain with numerous, closely spaced obstructions below Tom, terrain with numerous, closely spaced obstructions below Tom, terrain with numerous, closely spaced obstructions below Tom e.g. avan industrial areas.           Provisional Construction Code (NCC) Class 1, 20 4 buildings or operable (movable) area of doors or windows that is used in ventilation, calculations. an assumed value that des no trepresent an	COP	Coefficient of performance
Clusterin windows         Scheme) 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 2Fficiency 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).           Exposure         see exposure category exposed         terrain with no bestructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usualy above 10 floors).           Exposure category – ponet         seatered sheds, lightly vegletated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – ponet         terrain with numerous; closely spaced obstructions below 10m e.g. above 3 floors).           Exposure category – ponet         terrain with numerous; closely spaced obstructions e.g. and sasigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings the the ritorian and use, part a subjectified in the documentation, and subjectified bushliding. Definitions can be found at www.abcb gov.au.           Not torial shading feature         how chart category or porable (moveable) area of doors owindows that is used in ventilation calculations.           Provisional value         a home th	Conditioned	circumstances it will include garages.
Detail windows         methods.           EER         Energy use         This is your homes rating without solar or batteries.           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 ABCE Housing Provisions Standard).           Entrance door         these signify ventilation banefits in the modelling software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase(corridor in a Cast's building, software and must not be modelled as a door when opening to a minimally ventilase corridor in a Cast's building, software and must not be modelled obstructions below 10 floors).           Exposure category – portected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Horizontal shading feature         Provisional shading, the building in the horizontal plane, e.g. eaves, venadam, pergolas, carports, or overhangs or balconles with a does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of the openablik percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Provisional value         a home thau calvieves an actual va	Custom windows	
LER         input <sup>T</sup> 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 vertilation 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 – exposure category – open         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 no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with no obstructions e.g. and grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentent that is recommended by Nati-ERS to achieve the desired comfort on dillos.           Provisional value         the odgenability bercentent that is recommended	Default windows	
Energy value         The net cost is 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 – exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open terrain with new obstructions as a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheets, lightly vegetated bush blocks, develated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. cluburban housing, heavily vegetated bushland 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.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operalet (moveabile) area of doors or windows that is used in ventilation calculations.           Recommended capacity         a source trade or openability percentage or operalet (were able) area of doors or windows that is used in ventilation calculations.           Reflective wrap (also known as includes and atcheves and trade or the disting dowere able) area of doors or windows that is used in ventilation	EER	
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         see exposure category – exposed         terrain with no obstructions of a fair grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions of a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, effevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m 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 XCC 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 zoro home         a home that achieves a net zero energy value".           Provisional value         or must be modelled. Acceptable provisional values or oxample, 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 that gov.au.           Reflective wrap (also known as foil)         for NatHERS this is typically an operable window (i.e. can be opened)	Energy use	
Link are used         ventilated condor         ventilated condor           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions set as inflar height e.g. grasslands with few well scattered shstructions below 10m, farmland with scattered sheat units (e.g. above 3 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Notizonal Shading feature         provides shading to the buildings in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           NtCC) Class         1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www.abots.gov.au.           Nte zero home         a home that achieves a net zero energy value <sup>6</sup> .           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 or metage or parable (moveable) area of doors or windows that is used in ventilation calculations.           Reflective wrap (also known as crof light) for NatHERS t	Energy value	
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Provisonal 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           Opening percentage         the once perable (moveshiel) area of doors or windows that is used in ventilation calculations.           Provisional value         a home that achieves a net zero energy value*.           Provisional value         a nassumed 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 on the 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 as for light) for NatHERS this is typically an operable (moved) is expressed as a number between 0		ventilated corridor in a Class 2 building.
Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 buildings. Definitions can be found at www.abc.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moveabel) area of doors or windows that is used in ventilation calculations.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value         a provisional value           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 ores serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified splate area splate to walls, profes and will walls, but excludes eaves.           Stof window         for NatHERS this is		
Exposure category - protected       Exposure category - suburban         Exposure category - suburban       terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.         Provisoral 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 winthers.gov.au.         Recommended capacity       this is the capacity or size of equipment that is recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       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.         Skylight (also known as roof lights) <td< th=""><th>Exposure category – exposed</th><th></th></td<>	Exposure category – exposed	
Exposure category – suburban         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 (NCC) Class           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 model. Acceptable provisional values are outlined in the NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommended by NatHERS to achieve the desired comfort conditions in the person.           Reflective wrap (also known as foll)         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.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and		scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. an assumed 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 as foil)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) 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 radifuser.           Stors         Small-scale Technology Certificates, certificates created by the Creagistry for renewable energy technologies that may be bought and sold as part of the Small-scc	<u>8</u> 21	
National Construction Code (NCC) Class       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. 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 foril, sis 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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Shading features       includes neighbouring buildings, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level.         Solar heat gain coefficient SHAC()       the fraction of incident solar radiation admitted through a window, both directly trans	Exposure category – suburban	
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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable (mode) (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.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is ex		from upper levels.
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         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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stolar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subas part of the Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bo	(NCC) Class	
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 recommended by NatHERS to achieve the desired comfort conditions in the insulative properties.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stors       Small-scale Technology Certificates, 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 Regulator (CER)         are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy R		
Provisional value       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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.         STCs       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 Regulator (CER)         U-value       the rans	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         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 or continuous thermal breaks         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of hea	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         u-value       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical s	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Shading features       space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building (wing walls), hences, other buildings, vegetation (protected or listed heritage trees).         window shading device		
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building (wing walls), forces, other building, weight, or vertical shading e.g. window schading e.g. window awnings or screens but excludes horizontal* or vertical shading	Roof window	space, and generally does not have a diffuser.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		
StrCs       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.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       privides shading to the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Original         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>1</sup> Thermal breaks         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 polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
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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         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading device         Window shading device           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0009176157

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

Address

Lot/DP NCC class Floor/all Floors Type

Unit 9, 1 Phillip St, Goonellabah, NSW, 2480 Lot DP 230448 1a G of 1 floors New Home

# Plans

Main plan Prepared by Project: 23891 Raunik Design Group

# Construction and environment

### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley

### ccredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conflicts

# NCC Requirements

NCC provisions Strate/Territory variation Volume Two 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

The more stars the more energy efficient

# NATIONWIDE

# 59.4 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
lodelled	23.8	35.6
oad limits	N/A	N/A

### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

# 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 hstar.com.au/QR/Generate? p=yxSrbsbtr When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

### Energy use



Greenhouse gas emissions



Cost



### 6.4 Star Rating as of 11 Jan 2024

					HOUSI	
Certificate check	Approval Stage		Construction Stage			
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other	
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesse	Consen Surveyc	Builder	Consen	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?						
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?						
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown						

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6	
100	
10012	5281

<b>6.4 Star Rating as of</b> 11 Jan 2024					HOUSE
	Approva	I Stage	Constru Stage	ction	
Certificate check	scked	iority/ cked	fed	nority cked	ther
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	essment)	
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 Hom	e performa	ance asses	ssment is i	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)	Ţ	
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add but are not limited to: condensation, structural and fire safety requirements and any st					

Additional notes

requirements.

Downlights must not penetrate ceiling insulation.



# Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

### Custom windows\*

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

# Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	Ν	No
Kitchen/Living	ALM-001-04 A	W3	1500	3200	Awning	90	Ν	No
Kitchen/Living	ALM-002-04 A	W4	2400	2700	Sliding	45	E	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	S	No
Bed 2	ALM-002-04 A	W5	2400	2700	Sliding	65	Ν	No



# Roof window\* type and performance value

Default roof windows\*

No Data Available Custom roof windows* Window ID Window Maximum SHGC* Substitution tolerance ra	upper limi		
Custom roof windows* Window ID Window Maximum SHGC* Substitution tolerance ra			
Window ID Window Maximum SHGC* Substitution tolerance ra			
Window ID SHGC*			
Window ID SHGC" SHCC lower limit	Substitution tolerance ranges		
Description U-value* SHGC lower limit SHGC	upper limi		
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	Skylight shaft reflectance
No Data Available		

# Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

# External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	S

# External wall type

Wall	Wall	Solar Wall sh	ade Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	Ν	0	Yes
Bath	EW-1	2700	400	Е	11700	No
Bath	EW-1	2700	1800	S	1300	No
Ldry/Hall	EW-1	2700	1490	S	1700	No
Kitchen/Living	EW-1	2700	1100	W	0	No
Kitchen/Living	EW-1	2700	4000	Ν	0	No
Kitchen/Living	EW-1	2700	4200	E	6200	No
Kitchen/Living	EW-1	2700	3995	S	1300	No
Kitchen/Living	EW-1	2700	400	W	4300	No
Bed 2	EW-1	2700	3295	Ν	3100	No
Bed 2	EW-1	2700	4000	E	2900	No
Bed 2	EW-1	2700	3295	S	1300	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93	No insulation
IW-002	Stud, plasterboard	9.18	Bulk Insulation in the centre R1

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Suspended Concrete Slab 150mm	11.52	Basement Carpark	Bulk Insulation in Contact with Floor R1	<sup>1</sup> Carpet+Rubber Underlay 18mm
WC	Suspended Concrete Slab 150mm	1.94	Basement Carpark	Bulk Insulation in Contact with Floor R1	ו Ceramic Tiles 8mm

0009176157 NatHERS Certificate

6.4 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	Suspended Concrete Slab 150mm	4.09	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Ldry/Hall	Suspended Concrete Slab 150mm	4.99	Basement Carpark	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	32.65	Basement Carpark	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bed 2	Suspended Concrete Slab 150mm	13.14	Basement Carpark	Bulk Insulation in Contact with Floor R1	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed



# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]	
None Present				

# 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

### Cooling system

Appliance/ system type	Lo	cation	Fuel type	eff	inimum ïciency/ formance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation	Fuel type	eff	inimum ïciency/ formance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3 STC		bstitution e ranges	Assessed daily load
		CER Zone	/STC	510	lower limit	upper limit	[litres]
No Data Available							

Pool/spa equipment			
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

# Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



### 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

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
<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.
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.
Skylight (also known as roof lights	) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
	privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176116

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

#### Address

Lot/DP NCC class\* Floor/all Floors Type Unit 10, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

## Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

# 77.3 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	25.7	51.5
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=GSUAZEqEY . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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

NA – Not Applicable Outdoor Living Area Ceiling Fan:

Yes

No NA – Not Applicable

# Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.4 Star Rating as of 11 Jan 2024

······································	I		1		HOUSE
Certificate check	Approva	I Stage	Constru Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder	Consent Surveyo	Occupai
Genuine certificate check		Т	Т		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176116 NatHERS Certificate       5.4 Star Rating as of 11 Jan 2024					HOUSI
	Approva	I Stage	Constru Stage	ction	
Certificate check	ecked	hority/ ecked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	ssment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	ment)		
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	ň	n	n	n	1

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

Downlights must not penetrate ceiling insulation.



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	w Maximum SHGC*		Substitution tolerance ranges		
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
WINdow ID	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
GJA-001-34 A	Type 048 Series Awning Window SG 638CPGn	4.8	0.38	0.36	0.40
GJA-070-38 A	Type 245 Aluminium Sliding Door SG 638SctGn	4.4	0.42	0.40	0.44

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	GJA-001-34 A	W9	1500	2400	Awning	90	E	Yes
Kitchen/Living	ALM-001-04 A	W10	2400	900	Louvre	90	W	No
Kitchen/Living	GJA-070-38 A	W12	2400	2700	Sliding	65	Ν	No
Kitchen/Living	GJA-001-34 A	W7	1500	3200	Awning	90	E	Yes
Bed 2	ALM-001-04 A	W11	600	2100	Awning	90	Ν	No
Bed 2	GJA-070-38 A	W8	2400	2100	Sliding	65	E	No



## Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	w Maximum Succt Sub			itution tolerance ranges	
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Availa	able					
Custom roof wi	indows*					
Window ID	Window	Maximum	CUCC*	Substitution tolerance ranges		
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	

## 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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	W

## External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2000	S	1000	No
Bed 1	EW-1	2700	3295	Е	0	Yes
Bath	EW-1	2700	1800	W	1200	No
Kitchen/Living	EW-1	2700	3995	W	1200	No
Kitchen/Living	EW-1	2700	4200	Ν	3800	No
Kitchen/Living	EW-1	2700	4000	Е	600	Yes
Kitchen/Living	EW-1	2700	1100	S	0	No
Bed 2	EW-1	2700	3295	W	2800	No
Bed 2	EW-1	2700	4000	Ν	500	Yes
Bed 2	EW-1	2700	3295	E	4800	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	15.39	Bulk Insulation in the centre R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.52	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Bath	Framed Floor, Unit Below 19mm	4.09	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

0009176116 NatHERS Certificate

5.4 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Ldry/Hall	Framed Floor, Unit Below 19mm	4.99	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Kitchen/Living	Framed Floor, Unit Below 19mm	32.65	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Bed 2	Framed Floor, Unit Below 19mm	13.14	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Bed 2	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 10, 1 Phillip St , Goonellabah , NSW , 2480

0009176116 NatHERS Certificate	5.4 Star Rating as of 11 Jan 2024	
Location	Quantity	Diameter [mm]
Kitchen/Living	2	1200
Bed 2	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absor	otanceRoof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.3	Light

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ formance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 10, 1 Phillip St , Goonellabah , NSW , 2480



## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity

No Data Available

## **Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### 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\*.

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## Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
COP	Coefficient of performance
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.
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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	see exposure categories below.
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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.
<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.
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.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176090

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 11, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

## Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley

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## Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

# 78.2 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	25.2	53.0
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=NPDNjOJaW . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 N

NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes No

NA – Not Applicable

# Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.4 Star Rating as of 11 Jan 2024

					HOUSE
Certificate check	Approva	I Stage	Constru Stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consen	Builder	Consent	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

(

0009176090 NatHERS Certificate       5.4 Star Rating as of 11 Jan 2024					HOUSE
	Approva	I Stage	Construction Stage		
Certificate check	ecked	hority/ ecked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	essment)	
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 Hom	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	nent)		
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					

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

Downlights must not penetrate ceiling insulation.



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum U-value*		Substitution tolerance ranges		
	Description			SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC* Substitution tolerance ranges		lerance ranges
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
No Data Available					

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W6	1500	1800	Awning	90	E	No
Kitchen/Living	ALM-002-04 A	W1	2400	2700	Sliding	65	Ν	No
Kitchen/Living	ALM-001-04 A	W12	1500	3200	Awning	90	E	No
Bed 2	ALM-002-04 A	W8	2400	2100	Sliding	65	E	No

# Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	erance ranges
willdow ID	Description U-value*		SHOC	SHGC lower limit	SHGC upper limit
No Data Avail	lable				

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 11, 1 Phillip St , Goonellabah , NSW , 2480



Custom roof windows\*

Window ID	Window	Maximum	SHCC*	Substitution to	lerance ranges
	Description U-valu	U-value*	value* SHGC*	SHGC lower limit	SHGC upper limit
No Data Avai	lable				

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Ava	ilable							

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	W

## External wall type

Wall Wall ID type			 Bulk insulation [R-value]	Reflective wall wrap*
EW-1 Fibro Timber Stud	Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3695	S	0	No
Bed 1	EW-1	2700	3295	E	400	Yes
WC	EW-1	2700	1090	S	0	No
Bath	EW-1	2700	2295	S	0	No

0009176090 NatHERS Certificate

5.4 Star Rating as of 11 Jan 2024



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bath	EW-1	2700	1800	W	2800	No
Kitchen/Living	EW-1	2700	3995	W	2800	No
Kitchen/Living	EW-1	2700	4200	Ν	3300	No
Kitchen/Living	EW-1	2700	4000	E	0	Yes
Kitchen/Living	EW-1	2700	1100	S	0	No
Bed 2	EW-1	2700	3295	E	3100	Yes

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation
IW-002	Stud, plasterboard	24.84	Bulk Insulation in the centre R1

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.52	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Bath	Framed Floor, Unit Below 19mm	4.09	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Ldry/Hall	Framed Floor, Unit Below 19mm	4.99	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Kitchen/Living	Framed Floor, Unit Below 19mm	32.65	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm

0009176090 NatHERS Certificate

5.4 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 2	Framed Floor, Unit Below 19mm	13.14	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Bed 2	Plasterboard on Timber	Bulk Insulation R3.5	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

# Ceiling fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Fram	e Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light



## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	eff	nimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	nimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		ubstitution e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	;y/	Recomm capad	
No Data Available							

## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		



## **Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### Explanatory notes

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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.
<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.
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.
Skylight (also known as roof lights	
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176058

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 12, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

## Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 50.2 Unconditioned\* 0.0 Total 50.2 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

## Thermal performance Star rating

5.2 The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 82.1 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
Nodelled	29.1	53.0
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=xBdeNSUKz . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.2 Star Rating as of 11 Jan 2024

Certificate check	Approva	l Stage	Construe Stage	ction	HOUS
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder	Consent Surveyo	Оссира
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176058 NatHERS Certificate5.2 Star Rating as of 11 Jan 2024					HOUSE
	Approval Stage		Construction Stage		
Certificate check	hecked	ithority/ necked	cked	ithority necked	/Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in ti	he NatHE	ERS asse	essment)	
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 Hom	e performa	ance asses	ssment is I	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessi	ment)		
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					

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

Downlights must not penetrate ceiling insulation.



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
WINDOW ID	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
ALM-001-02 A	Aluminium A SG Tint	6.6	0.41	0.39	0.43
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.6	0.24	0.23	0.25	

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	S	Yes
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	Yes
Kitchen/Living	ALM-001-02 A	W4	1500	900	Awning	90	S	No



## Roof window\* type and performance value

Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
window iD	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
No Data Avail	able					

#### Custom roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	U-value*	SHGC	SHGC lower limit	SHGC upper limit		
	VEL-011-01 W VELUX					
	FS - Fixed Skylight DG					
VEL-011-01 W	3mm LoE 366 / 8.5mm	2.6	0.24	0.23	0.25	
	Argon Gap / 5.36mm					
	Clear La					

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	S1	0	600	1200	S	No	No

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Avail	able					

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	e [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5		Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No
Kitchen/Living	EW-1	2700	2000	E	1100	No
Kitchen/Living	EW-1	2700	3895	S	1800	No
Bath	EW-1	2700	1800	Ν	1600	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	24.03	Bulk Insulation in the centre R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	35.37	No insulation
IW-003	Stud, plasterboard	4.32	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.61	None	Bulk Insulation in Contact with Floor R2	<sup>1</sup> Carpet+Rubber Underlay 18mm
Kitchen/Living	Framed Floor, Unit Below 19mm	28.76	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Ldry	Framed Floor, Unit Below 19mm	3.63	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
wc	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

0009176058 NatHERS Certificate

5.2 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
	Fromod Floor Unit Polow			Bulk Insulation in	
Bath	Framed Floor, Unit Below 19mm	4.27	None	Contact with Floor R2	Ceramic Tiles 8mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
Kitchen/Living	5	Downlights - LED	0	Sealed
Ldry	2	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Fram	e Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light



## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	eff	nimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	e/ system type Location Fuel type		Minimum efficiency/ performance		Recommended capacity		
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type			Minimum efficiency/ performance		Recommended capacity		
No Data Available							

## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		



## **Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### 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

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
<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.
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.
Skylight (also known as roof lights	
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
window shading device	

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176199

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 13, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

## Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 50.2 Unconditioned\* 0.0 Total 50.2 Garage 0.0 Exposure type Suburban NatHERS climate zone

9 Amberley



## Accredited assessor

David Howard			
Partners Energy Management			
david@partnersenergy.com.au			
0421381005			
20039			
nisation			
Declaration completed: no conflicts			

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

# 80.6 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	27.6	53.0
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	0000		
(lowest conditioned area)	CSOG		
NCC climate zone 1 or 2	No		
Outdoor living area	No		
Outdoor living area ceiling fan	No		

## 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 hstar.com.au/QR/Generate? p=zfSlpXuSb . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost



#### 5.3 Star Rating as of 11 Jan 2024

······································					HOUSE
Certificate check		I Stage	Construction Stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consen	Builder	Consent	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

(

0009176199 NatHERS Certificate 5.3 Star Rating as of 11 Jan 2024							
	Approval Stage Construction Stage						
Certificate check	lecked	thority/ ecked	cked	thority ecked	Other		
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other		
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	ssment)			
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 Hom	e performa	ance asses	ssment is i	not conduc	ted)		
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessr	ment)				
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	ň	ň	ň	ň			

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

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.6	0.24	0.23	0.25	

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-002-04 A	W2	1500	2400	Awning	90	S	Yes
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	Yes
Kitchen/Living	ALM-001-04 A	W4	1500	900	Awning	90	S	No



## Roof window\* type and performance value

Default roof windows\*

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

#### Custom roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
	VEL-011-01 W VELUX					
	FS - Fixed Skylight DG		0.24			
VEL-011-01 W	3mm LoE 366 / 8.5mm	2.6		0.23	0.25	
	Argon Gap / 5.36mm					
	Clear La					

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	S1	0	600	1200	S	No	No

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser	
No Data Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	e [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5		Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No
Kitchen/Living	EW-1	2700	3895	S	1800	No
Bath	EW-1	2700	1800	Ν	1600	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	29.43	Bulk Insulation in the centre R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	35.37	No insulation
IW-003	Stud, plasterboard	4.32	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.61	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Kitchen/Living	Framed Floor, Unit Below 19mm	28.76	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Ldry	Framed Floor, Unit Below 19mm	3.63	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Bath	Framed Floor, Unit Below 19mm	4.27	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm



## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
Kitchen/Living	5	Downlights - LED	0	Sealed
Ldry	2	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

## Roof type

ConstructionAdded insulation [R-value]Solar absorptance Roof shade[colour]Corrugated Iron Timber FrameBulk, Reflective Side Down, No Air Gap Above R1.30.304790588235294 Light

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

0009176199 NatHERS Certificate	5.3 Sta	r Rating as of 1	1 Jan 2024				HOUS
Cooling system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ <sup>c</sup> ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ formance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							
Onsite Renewable Er	nergy Sch	edule					
System Type Orie	ntation		Syst	em Size O	r Generation	Capacity	

# Battery Schedule

No Data Available

System Type	Size [Battery Storage Capacity]
No Data Available	



#### 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<sup>\*</sup>.

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.           Assessed floor area         the floor area modelied in the software for the purpose of the NaHERS assessment. Note, this may not be consistent with the floor area in the design documents.           Celling penetrations         Exercise that require a penetration to the celling, including downlights, wents, exhaust fans, range hoods, chimmeys and flues. Exhaust fans, trange hoods, chimmeys and flues. The celling with small holes through the celling to wiring, e.g. celling fans, pendant lights, and cerumstances twill include gradges.           Conflictioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances twill include gradges.           Custom windows         windows tated in NaHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Window State are representative of a specific type of window product and whose properties have been derived by statistical methods.           ER         Energy Efficiency Ratio, measure of now much cooling can be achieved by an air conditioner for a single KMh of electricity input           Entrance door         The rele cost to soglety including that is input of based on standard).           Entrance door         The rele cost categories below.           Exposure category – exposed         termin with numerous, closely graded bastructions below 10m, farmand with scategory – poen scategories below.           Exposure category – protected         terran with numerous, c	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.           Geiling penetrations         Earlures that require a penetration to the coiling, including downlights, verts, exhaust fans, range hoods, chimneys and flues.           Conditional         Constraint in the design documents.         Constraint in the design documents.           Conditional         Constraint is expected to require heating and cooling based on standard occupancy assumptions. In some drown indows         Windows listen is expected to require heating and cooling based on standard occupancy assumptions. In some drown indows           Default windows         Windows listen in NatHERS Software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         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).           Exposure category – open         terrain with no costructions e.g. flig razing land, occan-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions bedrow (10m, e.g., abust 3 floors), or within Standard (10m, e.g., abust 3 floors), or withing and allowed modelled bush block, e.g., abust 3 floors, or withous halfers, standard occulations, a nassumed value building in the horticon allog, abust 3 floo		M. A Contract of the second seco
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input.           Default windows         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input.           Energy efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input.           Energy efficiency ratio, sour homes rating without solar or batteries.           Energy efficiency value         The rel cost to society including, but not limited to, costs to the building user, the environment and energy networks (as thrace door           Exposure         ese exposure category exposed           Exposure category - exposed         terrain with no obstructions ele/w.           Exposure category - protected         terrain with we obstructions sele/w.           Exposure category - protected         terrain with wo obstructions below.           National Construction Code         the works, close spaced obstructions below 10m, farmland with scattered shead, lightly vegetated bushland areas.           Exposure category - protected         terrain with no unerrow, closek spaced obstructions below 10m, farmland with scattered sheading in the horizoratal shading feature <th></th> <th>the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the</th>		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity.           Energy use         This is your homes rating without solar or batteries.           Energy use         The ret 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).           Exposure category – exposed         the ret cost to society including, but not limited to costs to the building user, the environment and energy networks (as defined in to obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10n, farmland with scattered obstructions at a similar height e.g. grasslands with well scattered obstructions below 10n, farmland with scattered obstructions at a similar height e.g. grasslands with ewell scattered obstructions below 10n, farmland with scattered obstructions below 10n e.g. city and induxital areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions core to found at www.accb.gov.ac.           Neticoral forestruction Code         then that datieve	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.
Culture         Control           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 input.           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 use         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).           Exposure category - exposed         Errain with no obstructions e.g. Ital grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category - protected         terrain with numerous, closely spaced obstructions below flom e.g. suburban tousing, heavily vegetated bushland areas.           Provisional Construction Code (NCC) Class 1.         the NCC groups building in the horizontal plane, e.g. avasubran tousing, heavily vegetated bushland areas.           Provisional value         the numerous, closely spaced obstructions due user, and assignate numerous, closely spaced obstructions core or windows that is used in ventilation calculations.           Not zero home         a home that achieves a net zero energy value <sup>2</sup> .           Opening percentage         the bunet d	COP	Coefficient of performance
Custom Windows         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 2 Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input           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 ABCE Housing Provisions Standard).           Entrance door         the net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no obstructions e a similar height e.g. grassends with few well scattered obstructions below 10m on, farmland with scattered sheds, lightly vegetated bush blocks, elevated umits (e.g. abwes 3 floors), tears and the numerous, closely spaced obstructions over 10 m e.g. suburban lerrain with numerous, closely spaced obstructions over 10 m e.g. abwes 3 floors).           Net zero home         the Openability preentage or operable (moveable) area of doors on windows that is used in ventilation calculations.           An one that achieves a net zero energy value <sup>6</sup> .         the openability preentage or operable (moveable) area of doors owindows that is used in ventilation calculations.           An one that achieves a net zero	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.
Data in whore         methods.           EER         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 ABCE 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 Cast's building.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed do bstructions below 10m, familand with texposure category – popen           Exposure category – popen         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Net zero home         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An one that achieves a net zero energy value. <sup>7</sup> openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.	Custom windows	
EER         input <sup>C</sup> Imput <sup>C</sup>	Default windows	
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 – exposure categories below.         Exposure category – exposure category – exposure category – protected         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 numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushlands areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. divaling in the Anticontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           National Construction Code         the NCC groups buildings and attached Class 10 buildings. Definitions can be found at www.abcls.gov.au.           Nate zon home         a home that achieves a net zero energy value*.           Opening percentage         the capacity or size of equipment that is recommended by NatHERS to achieve the desired confort conditions.           Recommended capacity         capacity disk of and cellings. When combined with an appropriate airgap and emissivity value, it provides installation early due for early and will diver an early and will diver and the fore table perisonal value for the admis elechonical Note continme	EER	
Line by Varie         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         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions cates in a dual segins a classification code. NatHERS software models NCC (ICC) class           National Construction Code         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC (ICC) class a lat 2 or 4 buildings and attached Class 10 a buildings. Definitions can be found at www.abcb.gov.au.           Net zero home         a home that achivers on or persent an actual value. Acceptable provisional values are outlined in the NatHERS to chronical Volus and a masumed value that does not represent an actual value. Acceptable provisional values are outlined in the NatHERS to the value that does on or size or generally. If the wall colour is unspecified in the documentation, and assert was classified or condition and the final selection sizing should be confinmed by a suitably qualified zerot on service and actut	Energy use	
Enhance dool         ventilated condor         ventilated condor           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions sel as initiar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, eleviated units (e.g. above 3 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Noticonal Construction Code         the NCC groups buildings that tatched Class 10 ab buildings. Definitions can be found at tww.abck.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 grovisional value or graze of equipment that is recommended by value flags and emissivity value, it provides insulative properities.           Reformended capacity         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properities. <t< th=""><th>Energy value</th><th>defined in the ABCB Housing Provisions Standard).</th></t<>	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions over 10 m.e.g. uburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           Morizontal 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         (he 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 10 a buildings. Definitions can be found at www.abcb.gova.u.           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.           Reflective wrap (also known as folling and at www.nathers.gov.au         this is the capacity or size of equipment that is recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as roof light)         can be applied to walls, roofs and cellings. When combined with an appropriate airga	Entrance door	ventilated corridor in a Class 2 building.
Exposure category - open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category - protected         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush blocks, elevated units (e.g. above 3 floors).           National Construction Code         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moveabel) area of doors or windows that is used in ventilation calculations.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the NatHERS Technical Note and the is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or ones serviced. This is a recommended by NatHERS to achieve the desired ormifort conditions in the zone or onella value in the is the capacity or size of equipment that is recommended by with an appropriate airgap and emissivity value, it provides installative properties.           Reflective wrap (also known as icollars) for NatHERS this is typically a noperable window (i.e. can be opened), will have a plaster or similar light well if there is an attic specificent (SHGC)           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Stors	· · ·	
Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10m 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           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.           an assumed value fait 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         the is is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the person.           Reflective wrap (also known as toil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides thous any conces serviced. This is a recommended on walls, but excludes eaves.           Storindi	Exposure category – exposed	
Exposure category - suburban         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 "nust 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 one serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as forlights)         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 n	Exposure category - open	
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) 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 subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar the fraction of incident solar radiation admitted fruogy scheme operated by the Clean Energy Regulator (CER) 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 or conti		
National Construction Code (NCC) Class       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. 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 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 as foll)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Shading features       includes neighbouring buildings, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) 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, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light we	Exposure category – suburban	
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         Reflective wrap (also known as concerved. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.           Roof window         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         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 Regulator (CER)           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 Regulator (CER)	-	from upper levels.
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         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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights)         for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and wue as part of the 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 Regulator (CER)           Thermal breaks         Unaonditioned         a zone within a dwelling that is assu	National Construction Code (NCC) Class	
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 recommended on the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stocs       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 Regulator (CER)         Thermal breaks       are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, such as timber battens greater than or equal to 2.0mm thick or continuous thermal		67 67
Provisional value       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it ransmits.         STCs       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 Regulator (CER)         ureati ta writh an R-valu	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         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 or continuous thermal breaks         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of hea	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         u-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       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 (wing walls), fences, other building, wells), forceed or listed heritage trees).         window shat provides shading e.g	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Rtock window       space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         Thermal breaks       Small-scale Technology Certificates, certificates created by the Clean Energy Regulator (CER)         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), ences, other buildings, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that pr		
Skylight (also known as roof lights) for NatHERŠ this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fonces, other buildings, vegetation (protected or listed heritage trees).         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading <th>Roof window</th> <th>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.</th>	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.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
String       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.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         ucconditioned       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 (wing walls), fences, other building, vegetation (protected or listed heritage trees).         window shading dovice       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights)	
Show         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>1</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Solar heat gain coefficient (SHGC)	subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
Thermal breaks         but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).           Window shading dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	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 Regulator (CER)
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         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Thermal breaks	but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such
Vertical shading features         provides shading to the building in the vertical plane and can be parallel of 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         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window chading device         Optimized fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176165

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#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 14, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 50.2 Unconditioned\* 0.0 Total 50.2 Garage 0.0 Exposure type Suburban NatHERS climate zone

9 Amberley



#### Accredited assessor

David Howard		
Partners Energy Management		
david@partnersenergy.com.au		
0421381005		
20039		
nisation		
Declaration completed: no conflicts		

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

# 81.1 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	28.7	52.4
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	CSUG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=krxuyQbfl . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.3 Star Rating as of 11 Jan 2024

	1				HOUSE
Certificate check	Approva	l Stage	Construe Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	Consen Surveyo	Builder	Consen Survey	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

(

0009176165 NatHERS Certificate       5.3 Star Rating as of 11 Jan 2024					HOUSE
	Approva	I Stage	Construe Stage	ction	
Certificate check	hecked	ithority/ necked	cked	ithority necked	/Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	RS asse	ssment)	
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	e performa	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessr	nent)		
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					

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

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.61
Kitchen/Living	Kitchen/Living	28.76
Ldry	Living	3.63
WC	Daytime	1.94
Bath	Living	4.27

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges			
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit		
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38		
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43		

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.6	0.24	0.23	0.25	

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	S	Yes
Kitchen/Living	ALM-002-04 A	W3	2400	2400	Sliding	45	S	Yes
Kitchen/Living	ALM-001-04 A	W4	1500	900	Awning	90	S	Yes
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	Ν	No



## Roof window\* type and performance value

Default roof windows\*

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

#### Custom roof windows\*

Window ID	Window	Maximum		Substitution tolerance ranges		
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
	VEL-011-01 W VELUX					
	FS - Fixed Skylight DG					
VEL-011-01 W	3mm LoE 366 / 8.5mm	2.6	0.24	0.23	0.25	
	Argon Gap / 5.36mm					
	Clear La					

## Roof window\* schedule

Location	Window ID	Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	S1	0	600	1200	Ν	No	No

## 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 [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Avail						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	Ν

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	e [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5		Anti-glare foil with bulk no gap R2	No

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 14, 1 Phillip St , Goonellabah , NSW , 2480



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	2995	S	0	No
Kitchen/Living	EW-1	2700	3895	S	1800	No
Kitchen/Living	EW-1	2700	2000	W	1100	No
Kitchen/Living	EW-1	2700	3900	Ν	1600	No
Bath	EW-1	2700	1800	Ν	1600	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ] Bulk insulation	
IW-001	Timber Stud Frame, Direct Fix Plasterboard	29.70 No insulation	
IW-002	Stud, plasterboard	24.03 Bulk Insulation in the centre R2	
IW-003	Stud, plasterboard	4.32 Bulk Insulation in the centre R1	

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.61	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
Kitchen/Living	Framed Floor, Unit Below 19mm	28.76	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Ldry	Framed Floor, Unit Below 19mm	3.63	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

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5.3 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
	Fromod Floor Unit Polow			Bulk Insulation i	n
Bath	Framed Floor, Unit Below 19mm	4.27	None	Contact with Floor R2	Ceramic Tiles 8mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
Kitchen/Living	5	Downlights - LED	0	Sealed
Ldry	2	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	1	1200

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Fram	e Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light



## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	Minimum efficiency/ performance			Recommended capacity	
No Data Available								
Heating system								
Appliance/ system type	Location Fuel type		Minimum efficiency/ performance		Recommended capacity			
No Data Available								
Hot water system								
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>ibstitution</b> e ranges upper limit	Assessed daily load [litres]	
No Data Available								
Pool/spa equipment								
Appliance/ system type		Fuel type		Minimu efficienc performa	;y/	Recomm capad		
No Data Available								

## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		



## **Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### 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 healing and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area in the design documents.           Ceiling penetrations         Edutures that require a penetration to the coiling, including downlights, wents, exhaust fans, range hoods, chinneys and flues. Beating and cooling ducts.           COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some distributions without and whose properties have been deviced by statistical methods.           Castom windows         the interpret of a specific type of window product and whose properties have been deviced by statistical methods.           EFR         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity           Energy value         The is your homes rating without solar or batteries.           Entrance door         these signify evaluations in the obselly including, but not limited, gottave and must not be modelled as a door whon opening to a minimally vehilable domidor in a class 2 building.           Exposure         The net cost is a solar height in the modelled bas door whon opening to a minimally vehilable domidor in a class 2 building.           Exposure category – potected         terrain with numerous, closely spaced obstructions bever 10 noty).           Exposure category – potected         terrain with numerous, closely space	AFRC	Australian Fenestration Rating Council
Provide the second state         The design documents.         International second state           Ceiling ponetrations         Exatures attached to the ceiling including downlights, vents, exhaust fans, range hoods, chimneys and flues. Exatures attached to the ceiling with small holes through the ceiling for wining, e.g. ceiling fans, pendant lights, and           COP         Coefficient of performance         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require healing and cooling based on standard occupancy assumptions. In some circumstances it will include granges.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating unindows flexing 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 efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input           Energy efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh few of electricity instate of the sole single kWh few of electricity instate of the sole single kWh few of elect	Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Scheme) rating.           Default windows         Window Energy Rating           Scheme) rating.         Window Energy Rating           Default windows         Window Stheme) rating.           Default windows         Window Stheme) rating.           ER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input for the order of to goolety including, but not limited to, coas to the building user, the environment and energy networks (as these singly volution.           Entrance door         These singly volution to berefit in the modelling software and must not be modelled as a door when opening to a minimally volution to berefit in the not bertuictons elew.           Exposure category - openet         terrain with no obstructions e.g. flat grazing land, ccean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category - protected         terrain with works obstructions below.           Exposure category - protected         terrain with works obstructions below.           Notizonal Value         terrain with numerous, closely spaced obstructions below.           Provides high percentage or operable (moveshigh percentage or operable (moveshigh percentage or operable (moveshigh	Assessed floor area	
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Energy listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Provisons Standard).           Energy value         The is your homes rating without solar or battenes.           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 House's building.           Exposure category – exposed         terrain with numerous, closely spaced obstructions below tons (a, suburba house), heavity vegetated bushing the garages and softmare and using have avoid and areas.           Exposure category – open         terrain with numerous, closely spaced obstructions below of no e.g., suburba housing, heavity vegetated bushing and to the building in the horizontal plane, e.g. awase, verandahs, pergolas, carports, or overhangs or balconies from upper levels.           Notizonal shading feature         tho with a diverse and pland to the building and atbac	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.
Continuing         Critical procession           Custom windows         bit in bit HERS software that are variable on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Custom windows         windows, that are representative of a specific type of window product and whose properties have been derived by statistical windows. That are representative of a specific type of window product and whose properties have been derived by statistical input.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           Energy value         The net cost osciety induding, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category - exposed         these signify ventilation beelow.           Exposure category - exposed         terrain with non costructions a ta similar height e.g. grasslands with few well scattered obstructions below TOm, farmland with Exposure category - protected           Exposure category - protected         terrain with numerous, closely spaced obstructions below TOm, farmland with for upper levels.           National Construction Code (NCC) Class 1.         the NCC groups building in the horicontal plane, e.g. avase; verandahs, pergolas; catports, or overhangs or balconies for upper levels.           Provisional Value         a home that achieves a net zero energy value?.           Net cor home         a home that achieves a net zero energy value?.           Class 1.<	COP	
Clastorium minutows         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 use         This is your homes rating without solar or batteries.           Energy value         The red cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the Abtilit Environged Provisions Standard).           Entrance door         versitiated corridor in a Class 2 building software and must not be modelled as a door when opening to a minimally vergosure           seposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usualy above 10 floors).           Exposure category – portected         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed obstructions below 10m, farmland with sequester obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. suburban to exposed, includings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10 abuildings. Definitions can be found at www.abcb.gov.au.           Norte to home         the openability percentage or operable (moveable	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.
Detault windows         methods.           EER         Energy LEfficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           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 Cleas 2 building.           Exposure category – exposed         terrain with no bosticutions e.g. fall grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions ever 10 m e.g. euburban housing, heavily segatated bushland areas.           Exposure category – sprotected         terrain with numerous, closely spaced obstructions ever 10 m e.g. euburban housing, heavily segatated bushland areas.           Horizontal shading feature         The building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies the NCC croups building is by their function and use, and assigns a classification code. NatHERS software models NCC (Lass 1, 2 or 4 buildings and attached Class 10a building). Definitions can be found at www.abbc.gov.au.           Provisional value         a home that achieves a net zero negrestile (moveal) activate. For example, if the wall colori is unspecified in the documentation. a provisional value of medium must be modelled. Acceptable provisional values are outilined in the NatH	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Link         input           Energy value         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 venillation benefits in the modelling software and must not be modelled as a door when opening to a minimally venillated corridor in a Class 2 building.           Exposure category – exposure categories below.         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 no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 me.g. suburban housing, heavily vegetated bushland 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.           NtCC) Class         Class 12 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.           Ntezero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentent that is eccommended by Nati-ERS to achieve the desired comfort conditions. in the zone or zones seriviced. This is a recommended on wabub, wabbcb, gov.au.	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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 – exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open terrain with new obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, effectived works of slow 2 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburba         terrain with numerous, closely spaced obstructions over 10 m e.g. divaling in terrain with numerous, closely spaced obstructions over 10 m e.g. divaling in terrain struction Code (NCC) Class 1, 2 or 4 buildings and attached Class 10 buildings. Definitions can be found at www.abc.g. ou.u.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operselle (moveabile) area of doors or windows that is used in ventilation calculations.           Recommended capacity         the sto 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 w	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Line Ty value         defined in the ABCB Housing Provisions Standard).           Entrance door         these signify entiliation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventiliated corridor in a Class 2 building.           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Fortional shading feature         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class           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.           Recommended capacity         an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, and assign as de outlined in the NatHERS Stechnical Note and to an be found at www.abbre. gov au           Recommended capacity         can be popied to walls, roofs and ceilings. When co	Energy use	This is your homes rating without solar or batteries.
Entrance door         ventilatéd corridor in a Class 2 building.           Exposure         see exposure category – exposed           Exposure category – open         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 no 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 – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           NCC Class         terrain with numerous, closely spaced obstructions cate 10 ab buildings. Definitions can be found at tww.abcs dovaau.           NCC Class         the NCC groups buildings and attached Class 10 ab buildings. Definitions can be found at tww.abcs dovaau.           Net zero home         a home that achieves a net zero energy value <sup>4</sup> .           Opening percentage         the openability percentage or oprable (moveable) area of doors or windows that is used in wentilation calculations.           Provisional value         an esumed value that does not represent an aclual value. For example, if the wall colour is unspecified in the documentation, a provisional value or metage or size of equipient that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. Th	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no ubstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburban         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.           Net zero home         a home that achieves a net zero energy value <sup>2</sup> .           Opening percentage         the NCC groups buildings of the building. Definitions can be found at www.abcb.gov.au.           Provisional value         a home that achieves a net zero energy value <sup>2</sup> .           Provisional value         a home that achieves a net zero energy value <sup>2</sup> .           Recommended capacity         preside of medium must be modelled. Acceptable provisional values are outlined in the AutHERS to achieve the desired confort 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 as coll lights) for NatHERS this is typically an operable (movalue of the duwal a diffuser at celling level.	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 – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush blocks, elevated units (e.g. above 3 floors).           Horizontal shading feature         provides shading in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           National Construction Code         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 10 buildings. Definitions can be found at www.abc.gov.au.           Net zero home         a home that achieves a net zero energy valle*.           Opening percentage         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           an assumed value of inedium' mist be and other using the out wantable structure is unspecified in the documentation, a provisional value of inedium' mist be 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 period.           Reflective wrap (also known as tori lights) for NatHERS this is typically an operable diffuser.         for NatHERS this is typically an operable diffuser.           Shading features         includes neighbouring buildings. fences, and wing walls, but excludes eaves.           Store wrap (also known as roof lights) for N	Exposure	see exposure categories below.
Exposure category – protected       terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.         Exposure category – suburban       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       (IASS 1, 2 or 4 buildings and tatched 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 NCC groups buildings of the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.         Provisional value       a home that achieves a net zero energy value*.         Opening percentage       the NCC groups building on the bound tatched Class 10a buildings. Definitions can be found at www.abcb.gov.au.         Recommended capacity       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 musts be modelled. Acceptable provisional values are cullined in the NatHERS Technical Note and can be found at www.abcb.gov.au.         Recommended capacity       zero in duity is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Rof window       for NatHERS this is typically an operable window (i	Exposure category – exposed	
Exposure category – suburban         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 1, 2 or 4 buildings by their function and use, and assigns a classification code. NatHERS software models NCC (NCC) Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcl.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.           Recommended capacity         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Solar heat gain coefficient         Shading features           Solar heat gain coefficient (SHGC)         the sits typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stylight (also known as roof lights) for NatHERS this is typical	Exposure category - open	scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. 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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically an operable window (i.e. can be opened), will have a diffuser at ceiling level.           Stoc         Small-scale Technology Certificates, certificates created by the direct transmite. </td <td></td> <td></td>		
National Construction Code       from upper levels.         National Construction Code       the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC         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 acual value. For example, if the wall colour is unspecified in the documentation, and or zones serviced. This is a recommended Acceptable provisional values are outlined in the 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 as insulative properties.       can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Shading features       includes neighbouring buildings, forces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) 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 section sizing should be confirmed by a subtably qualified subsequently released limitar.         Solar heat gain coefficient       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released limitar.         STCs       Small-scale Technology Cert	Exposure category – suburban	
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         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides foil)           Reflective wrap (also known as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stoar heat gain coefficient         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.           S		from upper levels.
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 as forl)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         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 Regulator (CER)           Thermal breaks         ut ransfer through a window. The lower the U-value, the better the insulating ability.           U-value         the rate of heat transfer through a window. The lower the U-value,	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.
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         The commended 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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           StrCs         Small-scale Technology Certificates, 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 Regulator (CER)           Thermal breaks         are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, as polystyrene insulation sheeting or plas		07
Provisional value         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         and can be found at www.nathers.gov.au           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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window         for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Stocs         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 Regulator (CER)           Thermal breaks         are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, as polystyrene insulation sheeting on requise strips           U-value	Opening percentage	
Recommended capacity       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         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 or continuous thermal breaks         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         U-value       the rate of heat transfer throu	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         U-value       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical s	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Robin         space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.           STCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as pair of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)           Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           vertical shading features         provides shading to the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Windowu chadin		
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips.         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building (wing walls), forces, other building, weight on (protected or listed heritage trees).         Window obsdime device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	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.
Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER) 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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. 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 building, vegetation (protected or listed heritage trees).         Window abading davice       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
StrCs       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.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).         Window obading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).         Window obsding davide       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		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.
as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         Unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         Vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).         Window obscing device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	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 Regulator (CER)
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 obscing device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 obscing dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window obscing device         Device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176132

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 15, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation 24
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

### Thermal performance Star rating

**D.9** The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 53.8 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	26.7	27.1
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=wqFMXnkDp . When using either link, ensure you are visiting hstar.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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost





#### 6.9 Star Rating as of 11 Jan 2024

···· · · · · · · · · · · · · · · · · ·					HOUSI
Certificate check	Approva	Il Stage	Constru Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	Consei Survey	Builder	Consei Survey	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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

(

0009176132 NatHERS Certificate6.9 Star Rating as of 11 Jan 2024					HOUSE
	Approva	al Stage	Constru Stage	ction	
Certificate check	lecked	thority/ ecked	ked	thority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu-	uded in t	he NatHE	RS asse	ssment)	
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 Hom	e perform	ance asses	ssment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	nent)		
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Addi but are not limited to: condensation, structural and fire safety requirements and any st requirements.					

Additional notes

Downlights must not penetrate ceiling insulation.



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

#### Default windows\*

Window ID Window		Maximum SHGC		Substitution to	olerance ranges	
	Description U-value*		SHGC lower limit	SHGC upper limit		
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges	
	Description	U-value*	3160	SHGC lower limit	SHGC upper limit
No Data Availa	able				

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	W	Yes
Kitchen/Living	ALM-001-04 A	W3	1500	3200	Awning	90	W	Yes
Kitchen/Living	ALM-002-04 A	W4	2400	2700	Sliding	65	Ν	No
Kitchen/Living	ALM-001-04 A	W12	2400	900	Louvre	90	E	No
Bed 2	ALM-002-04 A	W11	2400	2100	Sliding	65	W	Yes



## Roof window\* type and performance value

Default roof windows\*

Window ID Window		Maximum	SUCC*	Substitution tolerance ranges		
window ID	Description U-value*		SHGC lower limit	SHGC upper limit		
No Data Avail	able					
Custom roof w	vindows*					
Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges	
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
No Data Avail	able					

### 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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ]	Outdoor shade	Diffuser
No Data Available						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	E

## External wall type

Wall	Wall	Solar Wall sh	ade Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	W	300	No
Bed 1	EW-1	2700	3695	S	1000	No
WC	EW-1	2700	1090	S	1000	No
Bath	EW-1	2700	1800	Е	1200	No
Bath	EW-1	2700	2295	S	1000	No
Kitchen/Living	EW-1	2700	1100	S	3300	No
Kitchen/Living	EW-1	2700	4000	W	300	Yes
Kitchen/Living	EW-1	2700	4200	Ν	3300	No
Kitchen/Living	EW-1	2700	3995	E	1200	No
Bed 2	EW-1	2700	3295	W	3200	Yes

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93	No insulation
IW-002	Stud, plasterboard	24.84	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Concrete Slab on Ground 100mm	11.52	None	No Insulation	Carpet+Rubber Underlay 18mm
WC	Concrete Slab on Ground 100mm	1.94	None	No Insulation	Ceramic Tiles 8mm
Bath	Concrete Slab on Ground 100mm	4.09	None	No Insulation	Ceramic Tiles 8mm
Ldry/Hall	Concrete Slab on Ground 100mm	4.99	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	32.65	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2	Concrete Slab on Ground 100mm	13.14	None	No Insulation	Carpet+Rubber Underlay 18mm



## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R1	
WC	Plasterboard on Timber	Bulk Insulation R1	
Bath	Plasterboard on Timber	Bulk Insulation R1	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R1	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R1	
Bed 2	Plasterboard on Timber	Bulk Insulation R1	

# **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade[colour]
None Present			

# 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				

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 15, 1 Phillip St , Goonellabah , NSW , 2480



#### Appliance schedule

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

Note: A flat assumption of 5W/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

## Cooling system

Appliance/ system type	Lo	cation F	uel type	effi	nimum ciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	effi	nimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC -		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	;y/	Recomm capac	
No Data Available							

## **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

## **Battery** Schedule

System Type Size [Battery Storage Capacity]		
No Data Available		



#### 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

AFRC         Australian Fenestration Rating Council           Annual energy load         the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consisted floor area in the design documents.           Ceiling penetrations         features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chinneys. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant ligh heating and cooling ducts.           COP         Coefficient of performance         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by st methods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of eleinput           Entrace door         The net cost to society including, but not limited to, costs to the building user, the environment and energy networks defined in the ABCB Housing Provisions Standard).           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed	and flues. .tts, and . In some gy Rating atistical ectricity
Assessed floor area       the floor area an the design documents.         Ceiling penetrations       features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys.         CoP       Coefficient of performance         Conditioned       a zone within a dwelling that is expected to require heating and cooling ducts.         Custom windows       windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Scheme) rating.         Default windows       windows that are representative of a specific type of window product and whose properties have been derived by stimethods.         EER       Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of elk input         Energy value       The net cost to society including, but not limited to, costs to the building user, the environment and energy networks defined in the ABCB Housing Provisions Standard).         Exposure       see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 fermin with weigh studied bush blocks, elevated onlist (e.g. above 3 floors).         Exposure category – protected       terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.         Exposure category – suburban       terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.         Exposure category – protected       terr	and flues. .tts, and . In some gy Rating atistical ectricity
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COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by stimethods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of eleinput           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 defined in the ABCB Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 100 for scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bush halocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Provides shadi	gy Rating atistical ectricity
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Custom windowsScheme) rating.Default windowswindows that are representative of a specific type of window product and whose properties have been derived by similar to the methods.EEREnergy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of elemetry useEnergy useThis is your homes rating without solar or batteries.Energy valueThe net cost to society including, but not limited to, costs to the building user, the environment and energy networks defined in the ABCB Housing Provisions Standard).Entrance doorthese signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a reventilated corridor in a Class 2 building.Exposuresee exposure categories below.Exposure category – exposedterrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 ferrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farm scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).Exposure category – openterrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland at terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or from upper levels.National Construction Code (NCC) Classthe NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models N	atistical ectricity
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Exposure       ventilated corridor in a Class 2 building.         Exposure       see exposure categories below.         Exposure category – exposed       terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 f         Exposure category – open       terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, fam         Exposure category – open       terrain with numerous, closely spaced obstructions below 10m e.g. above 3 floors).         Exposure category – protected       terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.         Provides shading feature       provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or from upper levels.         National Construction Code (NCCC) Class       the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models N	
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Exposure category – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, fam scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily vegetated bushland a 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 from upper levels.           National Construction Code (NCC) Class         the NCC groups buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.	
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Exposure category – suburban         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 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 N Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.	
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National Construction Code (NCC) Class         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models N Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.	
(NCC) Class 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*.	ICC
55	
Opening percentage the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.	
Provisional value a nassumed value that does not represent an actual value. For example, if the wall colour is unspecified in the doct a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Techn and can be found at www.nathers.gov.au	nical Note
Recommended capacity this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort condition zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably or person.	s in the ualified
Reflective wrap (also known as foil) can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provi	
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 space, and generally does not have a diffuser.	⊧ is an attic
Shading features includes neighbouring buildings, fences, and wing walls, but excludes eaves.	
Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.	
Solar heat gain coefficient (SHGC) the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the heat it transmits.	e less solar
STCs Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (C	t may be
Thermal breaks are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. The but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks oplystyrene insulation sheeting or plastic strips	
U-value the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.	s includes,
Unconditioned a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumpti	s includes,
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed herit	s includes, aks such
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical s features* (eg eaves and balconies)	s includes, aks such ons.

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176108

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

#### Address

Lot/DP NCC class\* Floor/all Floors Type Unit 16, 1 Phillip St. Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

## Construction and environment

#### Assessed floor area [m2]\*

#### Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley



#### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation
Declaration of interest	Declaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

### Thermal performance Star rating

The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 85.6 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	40.8	44.8
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	0000
(lowest conditioned area)	CSOG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=xlvkkEgHm . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost





#### 5.1 Star Rating as of 11 Jan 2024

					HOUSE
Certificate check	Approva	I Stage	Constru Stage	ction	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assess	Consen Surveyo	Builder	Consen Surveyo	Occupa
Genuine certificate check	1	Т	1		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					



0009176108 NatHERS Certificate         5.1 Star Rating as of 11 Jan 2024					HOUSE
	Approva	al Stage	Constru Stage	ction	
Certificate check	Jecked	thority/ iecked	cked	thority lecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not include	uded in t	he NatHE	ERS asse	essment)	
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 Hom	e perform	ance asse	ssment is i	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)		
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					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add	itional requi	rements that	at 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

Downlights must not penetrate ceiling insulation.



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum U-value* SHGC*		* Substitution tolerance ranges		
	Description			SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window Maximum		SHGC*	Substitution tolerance ranges		
window iD	Description	U-value*	3160	SHGC lower limit	SHGC upper limit	
No Data Availa	able					

## Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	W	Yes
Kitchen/Living	ALM-001-04 A	W3	1500	3200	Awning	90	W	Yes
Kitchen/Living	ALM-002-04 A	W4	2400	2700	Sliding	65	Ν	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	E	No
Bed 2	ALM-002-04 A	W11	2400	2100	Sliding	65	W	Yes
Bed 2	ALM-001-04 A	W8	600	2100	Awning	90	Ν	No



## Roof window\* type and performance value

Default roof windows\*

No Data Available Custom roof windows*	iC upper limi		
Custom roof windows*			
Window Movimum Substitution tolorance r			
Window ID Window Maximum SHGC*	Substitution tolerance ranges		
Description U-value* SHGC lower limit SHGC	C upper limi		
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	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ]	Outdoor shade	Diffuser	
No Data Available							

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	E

## External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	W	300	No
Bed 1	EW-1	2700	2000	S	1000	No
Bath	EW-1	2700	1800	Е	1200	No
Bath	EW-1	2700	700	S	1000	No
Kitchen/Living	EW-1	2700	1100	S	3300	No
Kitchen/Living	EW-1	2700	4000	W	300	Yes
Kitchen/Living	EW-1	2700	4200	Ν	3300	Yes
Kitchen/Living	EW-1	2700	3995	E	1200	No
Bed 2	EW-1	2700	3295	W	3200	No
Bed 2	EW-1	2700	4000	Ν	2500	Yes

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93	No insulation
IW-002	Stud, plasterboard	22.41	Bulk Insulation in the centre R1

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.52	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Bath	Framed Floor, Unit Below 19mm	4.09	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

0009176108 NatHERS Certificate

5.1 Star Rating as of 11 Jan 2024



Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Ldry/Hall	Framed Floor, Unit Below 19mm	4.99	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Kitchen/Living	Framed Floor, Unit Below 19mm	32.65	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Bed 2	Framed Floor, Unit Below 19mm	13.14	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Bed 2	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 16, 1 Phillip St , Goonellabah , NSW , 2480

0009176108 NatHERS Certificate	5.1 Star Rating as of 11 Jan 2024	F Control of Control o
Location	Quantity	Diameter [mm]
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light

# 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation F	uel type	Minimum efficiency/ performance		Recommended capacity	
No Data Available							
Heating system							
Appliance/ system type	Lo	cation F	uel type	eff	inimum iciency/ ormance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		<b>ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac	
No Data Available							

\* Refer to glossary. Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 16, 1 Phillip St , Goonellabah , NSW , 2480



# **Onsite Renewable Energy** Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

**Battery** Schedule

System Type

Size [Battery Storage Capacity]

No Data Available



#### 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 precided amount of energy required for healing and cooling, based on standard occupancy assumptions.           Assessed floor area         the floor area in the design documents.           Ceiling penetrations         Eastures that require a penetration to the calling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Exhaust fans, trange hoods, chimneys and flues.           Conditioned         a zone within a dwelling that is expected to require healing and cooling based on standard occupancy assumptions. In some circumstances will include gardges.           Custom windows         window, fleted in NAI-ERS software that are available on the market in Australia and have a WERS (Window Energy Rating window, fleted in NAI-ERS software that are available on the market in Australia and have a WERS (Window Energy Rating window) that are representative of a specific type of window product and whose properties have been derived by statistical methods.           ER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input.           Entrance door         The set cost to beaciery including, but not limited to costs to the building user, the environment and energy networks (as tetras and or beaciery including, but not inminely werhilder do motion is a Cleas 2 building.           Exposure category – protected         terrain with numerous, closely spaced obstructions bever 10 mousing, heavity regulated busing holds, or window if the well post on housing, heavity regulated busing holds, or window if the well post on housing, heavity regulated busing holds, or window if the well closely including to the finctions exp o	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.           Geiling penetrations         Features that require a penetration to the coiling, including downlights, write, exhaust fans, range hoods, chimreys and flues.           Conditional         Constraint in the design documents.         Constraint in the design documents.           Conditional         Constraint is expected to require heating and cooling based on standard occupancy assumptions. In some drown mindows         Windows listen is expected to require heating and cooling based on standard occupancy assumptions. In some drown mindows           Default windows         Windows listen in NatHERS Software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         This is your homes rating without solar or batteries.           Energy value         The expected to packet to packet to costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category - open         Standard).         Costs of the building user, the environment and energy networks (as therap with the document to bostructions e.g. flig razing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category - open         Terrain with numerous, closely spaced obstructions below V10m, grammand with settless shading to the housing, heavily vegetated busing (or working).           Revisor category - open <th></th> <th>N N N N N N N N N N N N N N N N N N N</th>		N N N N N N N N N N N N N N N N N N N
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Expected in the control of the		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows 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.           ERE         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity full           Energy value         The is a coal to socially including, but not limited to costs to the building user, the environment and energy networks (as defined in he ARCB Housian Provisions Standard).           Exposure category – exposed         terain with no obstructions as 2 building.         terain with no obstructions as 2 building.           Exposure category – protected         terain with numerous, closely spaced obstructions show 10m e.g. subban housing, heavily vegetated bush holds, elevide units (e.g. above 3 floros).         terain with numerous, closely spaced obstructions can be found at wwell cattered obstructions below 10m, farmland with scattered obstructions are and the achieves an elizero energy value?           Chrosoling feature         the wollding in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or ovenhangs or balconies fro	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.
Culture         Current ances it will include garages.         Current and the set of the s	COP	Coefficient of performance
Custom Windows         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 2 Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity input           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 ABCE Housing Provisions Standard).           Entrance door         the net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCE Housing Provisions Standard).           Exposure         see exposure categories below.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – ponet         terrain with numerous; closely spaced obstructions below 10m e.g. suburban lerrain with numerous; closely spaced obstructions over 10 m e.g. alwore 3 floors), naminal with synomy reveals.           Noticola shading feature         the openability preentage or operable (moveable) area of doors on windows that is used in ventilation calculations.           Provisional value         a home that achieves a net zero energy value <sup>4</sup> .           Opening percentage         the openability preentage or operable (moveable) area of doors windows that is used in ventilation calculations.           an a	Conditioned	circumstances it will include garages.
Data in whore         methods.           EER         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 ABCE 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 Cast's building.           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed dobstructions below 10m, familand with texposure category – open           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed, dobstructions below 10m, familand with texposure category – upoteck           National Shading feature         from topper levels, the building in the horizontal plane, e.g. eaves, verandens, pergolas, carports, or overhangs or balconies from tupper levels.           Not zontal shading feature         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Provisional value that coleves an end zon value. For example, if the wait colour is unspecified in the documentation, a provisional value to of the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Reflective wrap (also known as conf levels conference and aculu value. For example, if the wait cool mifme dox sutably quali	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
LER         input <sup>T</sup> Energy value         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 vertilation 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 – exposure category – open         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 no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m.g. suburban housing, heavily vegetated bushland areas.           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 1, 2 or 4 buildings their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings to the modelled case to a sumed 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 value of a solar tredition was beck gova.           Reflective warp (also known as roof lights) for NatHERS this is tycically an operabl	Default windows	
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 – exposure categories below.         Exposure category – exposure category – exposure category – protected         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 numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushlands areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. closely and industrial areas.           Chroch Class         terrain with numerous, closely spaced obstructions over 10 m e.g. closely and industrial areas.           National Construction Code         the NCC groups buildings and attached Class 10a buildings. Definitions can be found at www.abcls. gov.au.           Net zero home         a home that achieves a net zero energy value*.         Opening percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Recommended capacity         the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zero tome a serviced. This is a recommendation and therelecton sizing should be contimed by a suitably qualified zeror o	EER	
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         see exposure category – exposed         terrain with no obstructions of a fair grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions of 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 – protected         terrain with numerous, closely spaced obstructions over 10m 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 XCC 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 building. Definitions can be found at www.abcb.gov.au.           Net zero home         a home that achieves a net zero energy value".           Provisional value         of equipment that is recommended by NatHERS to achieve the desired comfort conditions.           an assumed value that does not perseent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional value of vertinably qualified and transmited as well as absorbed and instal tra	Energy use	
Enhance dool         ventilated condor           Exposure         see exposure category – exposed           Exposure category – open         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 no obstructions set as inflar 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 – open         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburbat         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           National Construction Code         (NCC) Class         an other that achieves a net zero energy value <sup>6</sup> .           Net zero home         a home that achieves a net zero energy value <sup>6</sup> .         cease not at tww.abots, gov.au.           Provisional value         an ossumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a go rosiconal value wath and tww.abov.au.           Recommended capacity         the openability percentage or operable (moveable) area of doors or windows that is used in wentilation cantilation.           Reflective wrap (also known as roof light) for NatHERS this is typically an operable (moveable). Acceptable provisional value are aligned walue the wall we a diffuser.           Stylight (also known as roof light) for Na	Energy value	
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           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           Net zero home         a home that achieves a net zero energy value*.           Openning percentage         the oncental quipment that is used in ventilation calculations.           Provisional value         a nassumed value that does not represent an actual value. For example, if the vall colour is unspecified in the documentation, a provisional value of medium must be modelled. Acceptable provisional values are outlined in the NatHERS to achieve the desired confort 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 as roof light) for NatHERS this is typically an operable (movalue erited.         SHOE         S	Entrance door	ventilated corridor in a Class 2 building.
Exposure category - open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category - protected         terrain with numerous, closely spaced obstructions below 10m e.g. city and industrial areas.           Exposure category - suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 buildings. Definitions can be found at www.abc.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moveabel) area of doors or windows that is used in ventilation calculations.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional values are outlined or mechanism' agov.au           Recommended capacity         cars be applied to walls, nofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides institutive properties.           Roid is known as roof lights for NatHERS this is typically a nouled unit with fixels. Ereflective tubing (light well) and a diffuser at celling level.           Stoar heat gain coefficient (SHGC)<		
Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushand areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           National Construction Code         (NCC) Class           National Construction Code         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC           (NCC) Class         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC           (NCC) Class         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC           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 value e are outlined in the NatHERS Technical Note and the walk of a portice of service. This is a recommendation and the final selection sizing should be confirmed by a suilably qualified person.           Reflective wrap (also known as col be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Roof window	Exposure category – exposed	
Exposure category - suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Horizontal shading feature         provises 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 one serviced. This is a recommended to nail selection sizing should be confirmed by a suitably qualified person.           Reflective wrap (also known as foril gatus)         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 neig		scattered sneds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. an assumed 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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically an operable window (i.e. can be opened), will have a diffuser at ceiling level.           Store         Small-scale Technology Certificates, certificates created by the Great radiation appart of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator. (CRGC)           Strcs <th></th> <th></th>		
National Construction Code (NCC) Class       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 (NCC) Class         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. 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       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Shading features       includes neighbouring buildings, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) 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, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and	Exposure category – suburban	
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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         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 as foll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and wue as part of the 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 Regulator (CER)           Thermal breaks         Unable transfer through a window. The lower the U-value, the better the insulating ab	(NCC) Class	
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 recommended on the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stocs       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 Regulator (CER)         Thermal breaks       are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, such as timber battens greater than or equal to 2.0 mm thick or continuous thermal		07
Provisional value       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         ureatile were insulting	Opening percentage	
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foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         u-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       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 (wing walls), fences, other building, weigtation (protected or listed heritage trees).         window schading device <th>Recommended capacity</th> <td>zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified</td>	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
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Show         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>1</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading		subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
Inermal breaks         but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).           Window shading dovice         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
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Window chading device         Optimized fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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).
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# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176082

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 17, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

# Construction and environment

#### Assessed floor area [m2]\*

Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0 Exposure type Suburban NatHERS climate zone 9 Amberley



### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga ABSA	inisation
Declaration of interest	Declaration completed: no conflicts

# **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

# 88.8 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

Contraction and the second	Heating	Cooling
Modelled	36.7	52.0
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	CSUG
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

### 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 hstar.com.au/QR/Generate? p=xLMZgFpli . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22) for Unit 17, 1 Phillip St, Goonellabah, NSW, 2480



#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost



#### 4.9 Star Rating as of 11 Jan 2024

Certificate check	Approval Stage		Constru Stage	HOUSI	
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder	Consent Surveyo	Occupai
Genuine certificate check		ſı	л		
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

#### 4.9 Star Rating as of 11 Jan 2024

6	
6	
2011	0.000
1202	1999

4.5 Star Rating as of 11 Jan 2024					HOUSE
	Approva	al Stage	Construction Stage		
Certificate check	ecked	hority/ scked	ked	hority ecked	Other
Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in t	he NatHE	ERS asse	ssment)	
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 Hom	e perform	ance asse	ssment is i	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	S assessi	ment)	n	
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		<u>`</u>	<u>^</u>	n	
Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?					
Other NCC requirements					
Note: This Certificate only covers the energy efficiency requirements in the NCC. Add but are not limited to: condensation, structural and fire safety requirements and any st					

Additional notes

requirements.

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description U-value*		SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description	U-value*		SHGC lower limit	SHGC upper limit
No Data Availa	able				

# Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W6	1500	2400	Awning	90	Ν	No
Kitchen/Living	ALM-001-04 A	W10	2400	900	Louvre	90	S	No
Kitchen/Living	ALM-002-04 A	W8	2400	2700	Sliding	45	W	Yes
Kitchen/Living	ALM-001-04 A	W9	1500	3200	Awning	90	Ν	No
Bed 2	ALM-002-04 A	W7	2400	2400	Sliding	65	Ν	No



# Roof window\* type and performance value

Default roof windows\*

Description     U-value*     SHGC lower limit     SHGC upp       No Data Available     Custom roof windows*     Window ID     Window ID     Substitution tolerance ranges	Window ID	Window	Maximum	SUCC*	Substitution tolerance ranges		
Custom roof windows* Window ID Window Maximum SHGC* Substitution tolerance range	Window ID	Description U-value* SHGC*		SHGC lower limit	SHGC upper limit		
Window ID Window Maximum SHGC* Substitution tolerance range	No Data Avail	able					
Window ID SHGC*	Custom roof w	vindows*					
Description U-value* SHGC lower limit SHGC upp		Window	Maximum	<b>CUCC</b> *	Substitution tolerance ranges		
		Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
No Data Available	window ID	Description	e Talac				

### 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	Skylight shaft reflectance
No Data Available		

# Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

# External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	S

# External wall type

	Wall		de Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-1	Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	Ν	500	Yes
Bath	EW-1	2700	1800	S	1300	No
Bath	EW-1	2700	400	W	13200	No
Ldry/Hall	EW-1	2700	1490	S	1700	No
Kitchen/Living	EW-1	2700	400	E	4275	No
Kitchen/Living	EW-1	2700	3995	S	1300	No
Kitchen/Living	EW-1	2700	4200	W	5400	No
Kitchen/Living	EW-1	2700	4000	Ν	500	No
Kitchen/Living	EW-1	2700	1100	E	0	No
Bed 2	EW-1	2700	3295	S	1300	No
Bed 2	EW-1	2700	1000	W	2100	No
Bed 2	EW-1	2700	3295	Ν	3100	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Stud, plasterboard	17.28	Bulk Insulation in the centre R1
IW-002	Timber Stud Frame, Direct Fix Plasterboard	46.98	No insulation

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.52	None	Bulk Insulation ir Contact with Floor R2	<sup>1</sup> Carpet+Rubber Underlay 18mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation ir Contact with Floor R2	ו Ceramic Tiles 8mm

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Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	Framed Floor, Unit Below 19mm	4.09	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Ldry/Hall	Framed Floor, Unit Below 19mm	4.99	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Kitchen/Living	Framed Floor, Unit Below 19mm	32.65	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Bed 2	Framed Floor, Unit Below 19mm	13.14	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Bed 2	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed



# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Frame	e Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation	Fuel type	eff	inimum ficiency/ formance		mended acity
No Data Available							
Heating system							
Appliance/ system type	Lo	cation	Fuel type	eff	inimum ficiency/ formance		mended acity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3 STC		ubstitution e ranges	Assessed daily load
		CER Zone	e /STC	310	lower limit	upper limit	[litres]
No Data Available							

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Pool/spa equipment				
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity	
No Data Available				
Onsite Renewable Energy Schedule				

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

# Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



#### **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.           Assessed floor area         the floor area in the design documents.           Colling penetrations         features that requires a penetration to the celling, including downlights, wents, exhaust fans, range hoods, chinneys and flues. The heating and cooling tube.           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some consistent will include grades.           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some withous diverse in the include grades.           Default windows         windows flated in NathERS software that are available on the market in Australia and have a WERS (Window Energy Rating Window Energy Rating the cooling can be achieved by an air conditioner for a single KMh of electricity input windows.           ERR         Energy Efficiency Ratio, measure of now much cooling can be achieved by an air conditioner for a single KMh of electricity input is your homes rating without solar or batteries.           Entrance door         The net cort is the solely including that is expected to possible on the building user, the environment and energy networks (as Entrance door in a Class 2 building.           Exposure category – popen         exaports the intervince and a sole of the open sole of the sole of the open sole of the sole of the open sole of the op	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, veries, exhaust fans, range hoods, chinneys and flues.           Conditioned         Zone within a veliling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Windows lister in NatHERS Software that are available on the market in Australia and have a WERS (Window Energy Rating Schemer) rating.           Default windows         Energy selected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Earn         Energy selected to representative of a specific type of window product and whose properties have been derived by statistical methods.           Energy value         This is your homes rating without solar or batteries.           Energy value         The explore to acycle yincluding. But not limited to costs to the building user, the environment and energy networks (as dimensed on the ASE/disous Standard).           Exposure category - potented         Errar with a society including.         Standard).           Exposure category - potented         terrain with numerous, closely spaced obstructions below 10m o, acass, catered obstructions below 10m, formating with everal software and users.         Errain with severating and attached Class 10 buildings. </th <th></th> <th></th>		
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         Expension of the construction construction of the construction of the constructio	<u> </u>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           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).           Exposure         associety including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category – open         terrain with numerous, closely spaced obstructions bodin with (e.g. aburbah nousing, heavily vagetated bushing and the west light e.g. grassational with (for west) accused, aburbaha areas.           Exposure category – open stattered obstructions bodin with e.g. aburbah nousing, heavily vagetated bushing and to the building in the horizontal plane, e.g. aeves, verandaha, pergolas, carports, or overhangs or balconies for upper levels.           Norizontal shading feature         the valor contal plane	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.
Continuing         circumstances it will include garages.           Custom windows         windows tisted in NatTERS 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 input?           ERR         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 use         The net cost osciety induding, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).           Exposure category - exposed         terrain with no obstructions e.g. flat grazing land, occan-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category - protected         terrain with numerous, closely spaced obstructions below 10m, farmland with errain with numerous, closely spaced obstructions below 10m e.g. at suburban housing, heavily vegetated bushland areas.           Exposure category - protected         terrain with numerous, closely spaced obstructions below 10m e.g. at suburban housing, heavily vegetated bushland areas.           Exposure category = auburban         terrain with numerous, closely spaced obstructions area of cons or windows that is used in ventilation calculations.           National Construction Code (not CC) class 1, 27 d- buildings and atatched Class 10a buildi	COP	Coefficient of performance
Clusterin windows         Scheme) 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.           EFR         Energy 2Fficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricity imput           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).           Exposure         see exposure category exposed         terrain with no bene (b in the modelling software and must not be modelled as a door when opening to a minimally exposure category – pones           Exposure category – exposed         terrain with no obstructions e a similar hight e g ratissalinds with few well scattered obstructions below 100 nors).           Exposure category – poneted         terrain with numerous; closely spaced obstructions below 100 ne g, suburban housing, heavily vegetated bushland areas.           Exposure category – suburban         terrain with numerous; closely spaced obstructions over 10 m e g, city and industrial areas.           Exposure category – suburban         terrain with numerous; closely spaced obstructions close or windows that is used in ventilastion calculations.           Antional Shading feature         the openability percentage or operable (moveabie) area of doors or windows that is used in ventilastio	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.
Detail windows         methods.           EER         Energy use         This is your homes rating without solar or batteries.           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 ABCE 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 ventilased corridor in a Cast's building.           Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. clubardan industrial areas.           Horizontal shading feature         Provide partial must need to bas to close or windows that is used in ventilation calculations.           National Construction Code         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           A home that achieves a net zero energy value?         To class 1, 2 or 4 buildings and attached Class 10 abuildings. Definitions can be found at www.abcb.gov.au.           A home that achieves a net zero energy value?         To class 1, 2 or 4 buildings of and class 10 abuildings. Definitions can be found at www.abcb.gov.au.           A home that achieves a net zero energy value?	Custom windows	
EEK         input <sup>C</sup> C         C <thc< th="">         C         C         C</thc<>	Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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 – exposed terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no work to tool tools of the work of the wor	EER	
Links product         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         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily vegetated bushland areas.           National Construction Code         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC (Class           Net zero home         a home that achieves and zero operable (moveable) area d 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 Accumentation, an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the Accumentation, an assumed value that does	Energy use	
Link area dool         ventilated condor         ventilated condor           Exposure         see exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions set as inflar height e.g. grasslands with few well scattered sheaving, heavily vegetated bushland areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.           Noticonal Construction Code         (NCC) Class         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC           Opening percentage         the openability percentage or openable (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 colur is unspecified in the documentation, a provisional value or metage or parable (moveable) area of doors or windows that is used in ventilation calculations.           Referentwerap (also known as cord light) for NatHERS this is typically an operable (moveable). Acceptable provisional value end use and tase declines set opened), wil	Energy value	defined in the ABCB Housing Provisions Standard).
Exposure category – exposed         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m.e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10 m.e.g. city and industrial areas.           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           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the once perable (moveshiel) area of doors or windows that is used in ventilation calculations.           Provisional value         a nassumed 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 value are or suitably qualified person.           Reflective wrap (also known as for 0 and graph of the valls (or site of equipment that is recommended by NatHERS to achieve the desired confort conditions in the racion of incident solar radiation admitted through a window (ile, can be applied to walls, rioofs and cellings. When combined with an appropriate airgap and emissivity value, it provides field (sindes doce	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 – open         terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushloard areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions below 10m 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           National Construction Code         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 10 buildings. Definitions can be found at www.abc.gov.au.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the openability percentage or operable (moveabel) area of doors or windows that is used in ventilation calculations.           an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value         a provisional value           Reflective wrap (also known as icoll)         can be applied to walls, noos and ceilings. When combined with an appropriate airgap and emissivity value, it provides in the fraction of incident solar radiation admitted through a window (i.e. can be opened), will have a plaster or similar light well if there is an attice specificient (SHGC)           Stoar heat gain coefficient		
Exposure category – protected       terrain with numerous, closely spaced obstructions below 10m e.g. subtrain housing, heavily vegetated bushland areas.         Exposure category – suburban       terrain with numerous, closely spaced obstructions below 10m e.g. subtrain housing, heavily vegetated bushland areas.         National Construction Code (NCC) Class       terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.         National Construction Code (NCC) Class       the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC (NCC) Class         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.         an assumed value that doe 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 cullined in the NatHERS Technical Note and cape 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 as foll)       the appendent owalls, since and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffus	Exposure category – exposed	
Exposure category – suburban         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 (NCC) Class           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 10 buildings. Definitions can be found at www.acb.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 model. Acceptable provisional values are outlined in the NatHERS technical Note and can be found at www.nathers.gov.au           Recommended capacity         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Stading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as collights) 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 area diffuser.           Shading features         includes nei		scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Horizontal shading feature         provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies           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. an assumed value th 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 as foil)         can be applied to walls, roofs and cellings. When combined with an appropriate airgap and emissivity value, it provides includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) 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 generaly does radifuser.           Stors         Small-scale Technology Certificates		
National Construction Code (NCC) Class       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 (NCC) Class         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       ger 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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Shading features       includes neighbouring buildings, fonces, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at celling level.         Shading features       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward.	Exposure category – suburban	
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 as foil)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         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 Regulator (CER)           StrCs         Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologi		from upper levels.
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         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 as coff window         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.           Shading features         includes not finders. the value diffuser.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and solas part of the 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 Regulator (CER)           Thermal breaks         ut ransfer through a window. The lower the U-value, the better the insulating ability.	(NCC) Class	
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 imedium must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au         Recommended capacity       an assumed value of imedium must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a mouleded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stors       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 Regulator (CER)         Thermal breaks       are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the clading. This includes, but is no sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the		33
Provisional value       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 as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient       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.         STCs       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 Regulator (CER)         U-value       the rate	Opening percentage	
Recommended capacity       zone or zone's serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.         Reflective wrap (also known as foil)       can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.         Roof window       for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.         Shading features       includes neighbouring buildings, fences, and wing walls, but excludes eaves.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       Small-scale Technology Certificates, certificates created by the REC registry for renewable energy Regulator (CER)         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 or continuous thermal breaks         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       the rate of hea	Provisional value	a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note
foil)       insulativé 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.         Skylight (also known as roof lights)       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Solar heat gain coefficient (SHGC)       the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.         STCs       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 Regulator (CER)         u-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         u-value       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 (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).         window we shading device<	Recommended capacity	zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified
Rtock window         space, and generally does not have a diffuser.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Skylight (also known as roof lights) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.           Solar heat gain coefficient (SHGC)         the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.           STCs         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 Regulator (CER)           Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           vertical shading features         provides shading to the building (wing walls), fences, other building, wegetation (protected or listed heritage trees).           window s		
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StrCs       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.         STCs       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 Regulator (CER)         Thermal breaks       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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips         U-value       the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.         unconditioned       a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.         vertical shading features       provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other building, vegetation (protected or listed heritage trees).         Window shading device       device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Skylight (also known as roof lights	
Original         bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER) <sup>1</sup> Thermal breaks         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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Solar heat gain coefficient (SHGC)	subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar
Inermal breaks         Dut is not limited to, materials such as timper battens greater than or equal to 20mm thick or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips           U-value         the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.           Unconditioned         a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.           Vertical shading features         provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	STCs	bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
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Vertical shading features         provides shading to the building in the vertical plane and can be parallel of 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         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Window shading device         Window shading device           Window shading device         device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading	Unconditioned	
Window shading device device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)	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	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0009176041

Generated on 11 Jan 2024 using BERS Pro v5.1.7 (3.22)

#### Property

#### Address

Lot/DP NCC class\* Floor/all Floors Type Unit 18, 1 Phillip St, Goonellabah , NSW , 2480 Lot DP 230448 1a G of 1 floors New Home

### Plans

Main plan Prepared by Project: 23891 Raunik Design Group

# Construction and environment

#### Assessed floor area [m2]\*

### Conditioned\* 68.3 Unconditioned\* 0.0 Total 68.3 Garage 0.0

Exposure type Suburban NatHERS climate zone 9 Amberley



### Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039
Assessor Accrediting Orga	inisation
ABSA	
Declaration of interest	Declaration completed: no conflicts

# **NCC Requirements**

NCC provisions Strate/Territory variation Volume Two 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 <u>www.abcb.gov.au.</u>

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

### Thermal performance Star rating

5.2 The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 82.5 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
Nodelled	34.3	48.3
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	CSOG
(lowest conditioned area)	0000
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

## 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 hstar.com.au/QR/Generate? p=qawprKEtx . When using either link, ensure you are visiting hstar.com.au





#### 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 Standard 2022: NatHERS heating and cooling load limits* 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 onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

# Predicted Whole of Home annual impact by appliance

#### Energy use



Greenhouse gas emissions



Cost



#### 5.2 Star Rating as of 11 Jan 2024

			Construe	ction	HOUSE
Certificate check	Approva	I Stage	Stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent Authority/ Surveyor checked	checked	Consent Authority Surveyor checked	Occupancy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyo	Builder checked	Consent Surveyo	Occupar
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 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?					
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?					
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 'Floor type' 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 'Ceiling type' 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 'Roof type' 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 what is shown					

0009176041 NatHERS Certificate5.2 Star Rating as of 11 Jan 2024					HOUSE
	Approva	l Stage	Constru Stage	ction	Later of
Certificate check Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	uded in tl	he NatHE	RS asse	ssment)	
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 Hom	e performa	ance asses	sment is r	not conduc	ted)
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 'Appliance schedule' 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 'Appliance schedule' 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 'Appliance schedule' 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	NatHERS	assessr	nent)		
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					

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

Downlights must not penetrate ceiling insulation.



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Bed 1	Bedroom	11.52
WC	Daytime	1.94
Bath	Living	4.09
Ldry/Hall	Living	4.99
Kitchen/Living	Kitchen/Living	32.65
Bed 2	Bedroom	13.14

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum SHGC		Substitution to	lerance ranges	
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.6	0.36	0.34	0.38	
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges			
	Description	U-value*	3160	SHGC lower limit	SHGC upper limit		
No Data Availa	able						

# Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-001-04 A	W2	1500	2400	Awning	90	Ν	No
Kitchen/Living	ALM-001-04 A	W3	1500	3200	Awning	90	Ν	No
Kitchen/Living	ALM-002-04 A	W4	2400	2700	Sliding	45	E	No
Kitchen/Living	ALM-001-04 A	W1	2400	900	Louvre	90	S	No
Bed 2	ALM-002-04 A	W5	2400	2100	Sliding	65	Ν	No



# Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window Maximum			Window	Maximum SHGC* -		Substitution to	lerance ranges
	Description	U-value*	SHGC.	SHGC lower limit	SHGC upper limit			
No Data Avai	lable							
Custom roof v	vindows*							
		Maximum		Substitution to	lerance ranges			
Man days ID	Window	maximani	SHGC* -					
Window ID	Window Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit			

# 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	Skylight shaft reflectance
No Data Available		

# Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m <sup>2</sup> ] Orientation	Outdoor shade	Diffuser
No Data Available						

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1250	90	S

# External wall type

Wall	Wall	Solar Wall shad	e Bulk insulation	Reflective
ID	type	absorptance [colour]	[R-value]	wall wrap*
EW-	1 Fibro Timber Stud Frame Panel Direct Fix	0.5	Anti-glare foil with bulk no gap R2	No



# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bed 1	EW-1	2700	3295	Ν	500	Yes
Bath	EW-1	2700	400	E	11700	No
Bath	EW-1	2700	1800	S	1300	No
Ldry/Hall	EW-1	2700	1490	S	1700	No
Kitchen/Living	EW-1	2700	1100	W	0	No
Kitchen/Living	EW-1	2700	4000	Ν	600	No
Kitchen/Living	EW-1	2700	4200	E	6200	No
Kitchen/Living	EW-1	2700	3995	S	1300	No
Kitchen/Living	EW-1	2700	400	W	4300	No
Bed 2	EW-1	2700	3295	Ν	3100	No
Bed 2	EW-1	2700	4000	E	2900	No
Bed 2	EW-1	2700	3295	S	1300	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.93	No insulation
IW-002	Stud, plasterboard	9.18	Bulk Insulation in the centre R1

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	Framed Floor, Unit Below 19mm	11.52	None	Bulk Insulation in Contact with Floor R2	<sup>1</sup> Carpet+Rubber Underlay 18mm
WC	Framed Floor, Unit Below 19mm	1.94	None	Bulk Insulation in Contact with Floor R2	ו Ceramic Tiles 8mm

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Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	Framed Floor, Unit Below 19mm	4.09	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Ldry/Hall	Framed Floor, Unit Below 19mm	4.99	None	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Kitchen/Living	Framed Floor, Unit Below 19mm	32.65	None	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Bed 2	Framed Floor, Unit Below 19mm	13.14	None	Bulk Insulation in Contact with Floor R2	Carpet+Rubber Underlay 18mm

# Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bed 1	Plasterboard on Timber	Bulk Insulation R3.5	
WC	Plasterboard on Timber	Bulk Insulation R3.5	
Bath	Plasterboard on Timber	Bulk Insulation R3.5	
Ldry/Hall	Plasterboard on Timber	Bulk Insulation R3.5	
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R3.5	
Bed 2	Plasterboard on Timber	Bulk Insulation R3.5	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bed 1	3	Downlights - LED	0	Sealed
WC	1	Downlights - LED	0	Sealed
Bath	1	Downlights - LED	0	Sealed
Ldry/Hall	2	Downlights - LED	0	Sealed
Kitchen/Living	6	Downlights - LED	0	Sealed
Bed 2	3	Downlights - LED	0	Sealed



# **Ceiling** fans

Location	Quantity	Diameter [mm]
Bed 1	1	900
Kitchen/Living	2	1200
Bed 2	1	900

# Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]
Corrugated Iron Timber Frame	e Bulk, Reflective Side Down, No Air Gap Above R1.3	0.304790588235294 Light

## 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/m<sup>2</sup> is used for lighting, therefore lighting is not included in the appliance schedule.

#### Cooling system

Appliance/ system type	Lo	cation	Fuel type	eff	inimum ïciency/ formance		mended acity	
No Data Available								
Heating system								
Appliance/ system type	Lo	cation	Fuel type	Minimum efficiency/ performance			Recommended capacity	
No Data Available								
Hot water system								
Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3 STC		ibstitution e ranges	Assessed daily load	
		CER Zone	/STC	010	lower limit	upper limit	[litres]	
No Data Available								

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Pool/spa equipment			
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			
Onsite Renewable Ene	rgy Schedule		

System Type	Orientation	System Size Or Generation Capacity	
No Data Available			

# Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



#### 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

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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	see exposure categories below.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
<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.
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.
Skylight (also known as roof lights	) for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
STCs	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 Regulator (CER)
Thermal breaks	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 or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)
	privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading