# Nationwide House Energy Rating Scheme<sup>®</sup> Class 2 Summary NatHERS<sup>®</sup> Certificate No. 0009014780

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

### Property

Address

Name

Email

Phone

Lot/DP NatHERS Climate Zone 20-22 Raymond Street, Eastwood, NSW, 2122 Lot 34,35 DP 35375 56 Mascot (Sydney Airport)



Dean Gorman Greenview Consulting Pty Ltd dean@greenview.net.au 8544 1683 DMN/13/1645

### Assessor Accrediting Organisation

Design Matters National

# Verification

**Business name** 

Accreditation No.

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate? p=mqQqqFlho . When using either link, ensure you are visiting hstar.com.au



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





R

The rating above is the average of all dwellings in this summary.

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

### NCC heating and cooling maximum loads (MJ/m<sup>2</sup>/p.a.)

Limits taken from ABCB Standard 2022

Heating	Cooling
12.4	6.6
N/A	N/A
	12.4

# Whole of Home performance rating

No Whole of Home performance rating conducted for this summary certificate or not completed for all dwellings

### 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
<u>0008751364-01</u> 2 0.4 (N/A) 3.6 (N/A) 4.1 10 0	0008751455-01	1	1.5 (N/A)	4.8 (N/A)	6.4	9.9	0
	<u>0008751364-01</u>	2	0.4 (N/A)	3.6 (N/A)	4.1	10	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 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for 20-22 Raymond Street , Eastwood , NSW , 2122



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
0008751398-01	3	9.82 (N/A)	2.70 (N/A)	12.52	8.9	0
0008751414-01	4	26.35 (N/A)	5.38 (N/A)	31.73	6.8	0
0008751430-01	5	7.90 (N/A)	5.83 (N/A)	13.74	8.8	0
0008751448-01	6	22.94 (N/A)	11.36 (N/A)	34.31	6.4	0
0008751372-01	7	6.71 (N/A)	10.52 (N/A)	17.23	8.4	0
0008751380-01	8	4.03 (N/A)	9.49 (N/A)	13.52	8.8	0
0008751406-01	9	15.64 (N/A)	8.44 (N/A)	24.08	7.6	0
0008751422-01	10	28.50 (N/A)	3.41 (N/A)	31.91	6.8	0

### Summary of all dwellings (continued)

### **Explanatory notes**

#### About this ratings

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an apartment block. 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.

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 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.

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

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0008751455-01

Generated on 16 Oct 2023 using BERS Pro v5.1.5 (3.22)

# Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 1, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

### Plans

Main plan Prepared by BGH7W DTA Architects

# Construction and environment

Assessed floor area [m2]\* Conditioned\* 50.0 Unconditioned\* 0.0 Total 50.0 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



### Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

# **NCC Requirements**

NCC provisions Strate/Territory variation Volume One

Yes

### National Construction Code (NCC) requirements

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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.

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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

# 6.4 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
odelled	1.5	4.8
oad limits	N/A	N/A

### Features determining load limits

M

Lo

Floor Type	N/A
(lowest conditioned area)	19/0
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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#### 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



### 9.9 Star Rating as of 16 Oct 2023

Certificate check	Approval Stage		Construction Stage		HINDUSE
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					
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					

<u>.</u>

0008751455-01 NatHERS Certificate       9.9 Star Rating as of 16 Oct 2023	Approva	I Stage	Constru Stage	ction	MUCHAN
Certificate check Continued	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not incl	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?					

### **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



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	23.39
Bedroom 1	Bedroom	12.93
Entry	Daytime	6.35
Bath/Ldy	Daytime	7.35
Glazed Common A	Glazed Common Area	16.96

# 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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60	
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74	

### Custom windows\*

Window ID	Window	Maximum	SHGC* -	Substitution tolerance ranges		
window iD	Description	U-value*	3160	SHGC Iower limit SHGC upper		
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*
Kitchen/Living	ALM-001-01 A	n/a	800	970	Awning	90	NW	No
Kitchen/Living	ALM-002-01 A	n/a	800	1810	Awning	00	NW	No
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NE	Yes
Bedroom 1	ALM-001-01 A	n/a	1800	1810	Awning	30	NE	No
Glazed Common A	ALM-001-01 A	n/a	2400	1000	Awning	90	NE	No
Glazed Common A	ALM-002-01 A	n/a	2400	800	Awning	00	NE	No

# Roof window\* type and performance value

### Default roof windows\*

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



Default roof windows\*

Window ID	Window	Window Maximum	01100*	Substitution tolerance ranges		
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
	index.e*					
Custom roof w	lindows					
Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges	

# 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
No Data Available				

# External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	7400	NW	0	No

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9.9 Star Rating as of 16 Oct 2023



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	3545	NE	3600	Yes
Bedroom 1	EW-1	2700	700	NW	3600	No
Bedroom 1	EW-1	2700	3600	NE	0	No
Bedroom 1	EW-1	2700	2200	SE	3300	No
Glazed Common A	EW-1	2700	3245	NE	1600	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation	
IW-001	Single Skin Brick	46.17	No insulation	
IW-002	Cavity brick	34.56	No Insulation	

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 200mm	23.39	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 200mm	12.93	None	No Insulation	Carpet+Rubber Underlay 18mm
Entry	Concrete Slab on Ground 200mm	6.35	None	No Insulation	Ceramic Tiles 8mm
Bath/Ldy	Concrete Slab on Ground 200mm	7.35	None	No Insulation	Ceramic Tiles 8mm
Glazed Common A	Concrete Slab on Ground 200mm	16.96	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]
Kitchen/Living	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	
Entry	Concrete, Plasterboard with Timber Frame	No insulation	
Bath/Ldy	Concrete, Plasterboard with Timber Frame	No insulation	
Glazed Common A	Concrete, Plasterboard with Timber Frame	No insulation	



# **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 1	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	Location	Fuel 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	Hot Fuel type Water CER Zone	Minimum efficiency	Zone 3	Zone 3 Substitution tolerance ranges		Assessed daily load	
		CER Zone	/STC	STC	lower limit	upper limit	[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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### Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Assessed floor area	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* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0008751364-01

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

# Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 2, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

### Plans

Main plan Prepared by BGH7W DTA Architects

# Construction and environment

Assessed floor area [m2]\* Conditioned\* 50.0 Unconditioned\* 0.0 Total 50.0 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



### Accredited assessor

 Name
 Dean Gorman

 Business name
 Greenview Consulting Pty Ltd

 Email
 dean@greenview.net.au

 Phone
 8544 1683

 Accreditation No.
 DMN/13/1645

 Assessor Accrediting Organisation
 Design Matters National

 Declaration of interest
 Declaration completed: no conflicts

**NCC Requirements** 

NCC provisions Strate/Territory variation Volume One

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.

Star rating

The more stars

the more energy efficient

NATIONWIDE

Thermal performance

4.1 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
odelled	0.4	3.6
oad limits	N/A	N/A

### Features determining load limits

M

Lo

Floor Truck	
Floor Type	N/A
(lowest conditioned area)	IN/A
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=NwjlWQHMy . 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:
- ICC Climate Zone 1 of
  - 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



### 10 Star Rating as of 23 Oct 2023

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	1	Т	Т	,r	
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
	Approva	I Stage	Construction Stage		
Certificate check Continued		Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
Additional NCC requirements for thermal performance (not inclu	ided in ti	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	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**



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	23.39
Bedroom 1	Bedroom	12.92
Entry	Daytime	6.35
Bath/Ldy	Daytime	7.35

# 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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

### Custom windows\*

Window ID	Window	Maximum	SHGC* -	Substitution to	lerance 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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NE	Yes
Bedroom 1	ALM-001-01 A	n/a	1800	1810	Awning	30	NE	No

# Roof window\* type and performance value

### Default roof windows\*

Vindow ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
No Data Avail	lable				
Custom roof w	vindows*				
Custom roof w	vindows* <b>Window</b>	Maximum	SHGC*	Substitution to	lerance ranges



# Roof window\* schedule

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

# Skylight\* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

# Skylight\* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²] Or	Prientation	Outdoor shade	Diffuser
No Data Availa	able						

# External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

# External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

# External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	4000	NW	0	No
Kitchen/Living	EW-1	2700	3545	NE	3500	Yes
Bedroom 1	EW-1	2700	700	NW	3600	No
Bedroom 1	EW-1	2700	3600	NE	0	No
Bedroom 1	EW-1	2700	600	SE	0	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ] Bu	Ik insulation
IW-001	Cavity brick	39.69 No	Insulation

\* Refer to glossary. Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 2, 20-22 Raymond Street , Eastwood , NSW , 2122

10 Star Rating as of 23 Oct 2023

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-002	Single Skin Brick	30.24	No insulation

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 200mm	23.39	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 200mm	12.92	None	No Insulation	Carpet+Rubber Underlay 18mm
Entry	Concrete Slab on Ground 200mm	6.35	None	No Insulation	Ceramic Tiles 8mm
Bath/Ldy	Concrete Slab on Ground 200mm	7.35	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]
Kitchen/Living	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	
Entry	Concrete, Plasterboard with Timber Frame	No insulation	
Bath/Ldy	Concrete, Plasterboard with Timber Frame	No insulation	

# Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 1	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	nimum iciency/ ormance		mended acity
No Data Available							
Heating system							
Appliance/ system type Location F		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	cy/	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

	Australian Fenestration Rating Council
	he predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area th	or area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the oor area in the design documents.
Ceiling penetrations	eatures 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 leating and cooling ducts.
	Coefficient of performance
conditioned ci	zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some ircumstances it will include garages.
	vindows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
	vindows that are representative of a specific type of window product and whose properties have been derived by statistical nethods.
	nergy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity
	his is your homes rating without solar or batteries.
Lileigy value de	he net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as efined in the ABCB Housing Provisions Standard).
	hese signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally entilated corridor in a Class 2 building.
	ee exposure categories below.
	errain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
	errain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with cattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
	errain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
	errain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizonial shaung leature	rovides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies rom upper levels.
	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 10a buildings. Definitions can be found at www.abcb.gov.au.
	home that achieves a net zero energy value*.
	he openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value a	In 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 ind can be found at www.nathers.gov.au
Recommended capacity zo	nis is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the one or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified erson.
Reflective wrap (also known as ca foil)	an be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides nsulative properties.
Roof window fo	or 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 pace, and generally does not have a diffuser.
Shading features in	ncludes neighbouring buildings, fences, and wing walls, but excludes eaves.
	or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
(SHGC)	ne fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and ubsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar leat it transmits.
STCs S	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be ought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)
Thermal breaks by	re materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, ut is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such is polystyrene insulation sheeting or plastic strips
U-value th	ne 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	rovides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes rivacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device defe	levice fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading eatures* (eg eaves and balconies)

# Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0008751398-01

Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22)

# Property

Address

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

### Plans

Main plan Prepared by Unit 3, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

BGH7W DTA Architects

# Construction and environment

### Assessed floor area [m2]\*

Conditioned\*64.3Unconditioned\*7.6Total71.9Garage0.0

Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



### Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

# **NCC Requirements**

NCC provisions Strate/Territory variation Volume One

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

# 12.5 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	9.8	2.7
Load limits	N/A	N/A

### Features determining load limits

Floor Type	N/A
(lowest conditioned area)	IN/A
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=RMEImGHPq . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 3, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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:
- NCC Climate Zone 1 of 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



#### 8.9 Star Rating as of 19 Oct 2023

····· · · · · · · · · · · · · · · · ·					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.	Assesse	Consen Surveyo	Builder	Consen Surveyo	Occupa
Genuine certificate check	ſı	л	1	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					

0008751398-01 NatHERS Certificate8.9 Star Rating as of 19 Oct 2023					HOUSE
	Approva	I Stage	Constru Stage	ction	
Certificate check	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other
	Assesso	Consent Surveyo	Builder o	Consent Surveyo	Occupar
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	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					

### Other NCC requirements

'Additional notes' table below?

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



### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	24.67
Bedroom 1	Bedroom	13.24
Bath/Ldy	Unconditioned	7.59
Hall	Daytime	5.81
Bedroom 2	Bedroom	12
Entry	Daytime	8.53

# 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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60	
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74	

### Custom windows\*

Window ID	Window	w Maximum		Substitution tolerance ranges		
WIND	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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NE	Yes
Bedroom 1	ALM-001-01 A	n/a	1800	1810	Awning	30	NE	No
Bedroom 1	ALM-002-01 A	n/a	800	1810	Awning	00	SE	No
Bath/Ldy	ALM-001-01 A	n/a	800	730	Awning	90	SE	No
Bedroom 2	ALM-001-01 A	n/a	1200	1690	Awning	45	SE	No

# Roof window\* type and performance value

### Default roof windows\*

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



Default roof windows\*

	Window Maximum Description U-value* SHGC	SUCC*	Substitution to	Substitution tolerance ranges		
Window ID		U-value*	SHGC	SHGC lower limit	SHGC upper limit	
Custom roof w	/INDOWS <sup>*</sup>					
Window ID	Windows <sup>*</sup>	Maximum	SHGC*	Substitution to	lerance ranges	

# 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
Hall	2400	1000	90	SE

# External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]	
Kitchen/Living	EW-1	2700	3545	NE	3500	No	_

0008751398-01 NatHERS Certificate

8.9 Star Rating as of 19 Oct 2023



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bedroom 1	EW-1	2700	2700	NW	3600	No
Bedroom 1	EW-1	2700	3600	NE	0	No
Bedroom 1	EW-1	2700	4145	SE	0	No
Bath/Ldy	EW-1	2700	2245	SE	0	No
Bath/Ldy	EW-1	2700	300	SW	1700	No
Hall	EW-1	2700	1590	SE	0	No
Bedroom 2	EW-1	2700	300	NE	1700	No
Bedroom 2	EW-1	2700	3800	SE	0	No
Bedroom 2	EW-1	2700	1900	SW	0	No

# Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation	
IW-001	Single Skin Brick	64.26	No insulation	
IW-002	Cavity brick	27.27	No Insulation	

# Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 200mm	24.67	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 200mm	13.24	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath/Ldy	Concrete Slab on Ground 200mm	7.59	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab on Ground 200mm	5.81	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 200mm	12.00	None	No Insulation	Carpet+Rubber Underlay 18mm
Entry	Concrete Slab on Ground 200mm	8.53	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]
Kitchen/Living	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	

0008751398-01 NatHERS Certificate

8.9 Star Rating as of 19 Oct 2023

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bath/Ldy	Concrete, Plasterboard with Timber Frame	No insulation	
Hall	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 2	Concrete, Plasterboard with Timber Frame	No insulation	
Entry	Concrete, Plasterboard with Timber Frame	No insulation	

# **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed
Bath/Ldy	0	Exhaust Fans	150	Unsealed

# **Ceiling** fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 1	1	900
Bedroom 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.

### Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available				

\* Refer to glossary. Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 3, 20-22 Raymond Street , Eastwood , NSW , 2122

Appliance/ system type	Lo	cation Fi	uel type	eff	inimum ficiency/ formance		imended bacity
No Data Available							
Hot water system							
Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC		ubstitution te ranges upper limit	Assessec daily loac [litres]
No Data Available			-				
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficiene performa	cy/	Recomm capad	
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
Assessed noor area	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	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. 0008751414-01

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

### Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 4, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

### Plans

Main plan Prepared by BGH7W DTA Architects

# Construction and environment

Assessed floor area [m2]\* Conditioned\* 71.0 Unconditioned\* 0.0 Total 71.0 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



### Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

# **NCC Requirements**

NCC provisions Strate/Territory variation Volume One

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

**6.8** The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

31.7 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
odelled	26.4	5.4
oad limits	N/A	N/A

### Features determining load limits

1.4

Floor Type	N/A
(lowest conditioned area)	IN/A
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=kMoProlax . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 4, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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



#### 6.8 Star Rating as of 23 Oct 2023

Certificate check	Approva	I Stage	Construe Stage	ction	HOULSE a
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		Consent Authority Surveyor checked	cy/Other
Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.	Assesso	Consent Surveyor	Builder checked	Consent Surveyor	Occupancy/Other
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					

<u>.</u>

0008751414-01 NatHERS Certificate6.8 Star Rating as of 23 Oct 2023					HOUSE
	Approva	I Stage	Constru Stage	ction	
Certificate check	lecked	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 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	nent)	Ţ.	0
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	n	n.	n	n	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 Cartificate only covers the energy efficiency requirements in the NOO Addi	tional rage:	romonto the	t munt als -	he estisfic -	lipoludo

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



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]	
Kitchen	Kitchen/Living	14.71	
Entry	Daytime	10.93	
Bath/ldy	Daytime	7.32	
Bedroom 1	Bedroom	14.17	
Bedroom 2	Bedroom	11.26	
Living	Living	12.59	

# Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum SHGC		Substitution to	n tolerance ranges	
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
	Aluminium A DG Air Fill					
ALM-003-03 A	High Solar Gain low-E -	4.3	0.47	0.45	0.49	
	Clear					
	Aluminium B DG Air Fill					
ALM-004-03 A	High Solar Gain low-E -	4.3	0.53	0.50	0.56	
	Clear					

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
willdow iD	Description	scription 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*
Kitchen	ALM-003-03 A	n/a	1200	1690	Awning	45	SE	No
Bedroom 1	ALM-004-03 A	n/a	2400	2170	Awning	45	SE	No
Bedroom 1	ALM-003-03 A	n/a	1200	1330	Awning	45	SW	No
Bedroom 2	ALM-004-03 A	n/a	1800	1810	Awning	30	SW	No
Living	ALM-004-03 A	n/a	2400	2410	Awning	45	SE	No
Living	ALM-003-03 A	n/a	1200	730	Awning	90	SW	No

# HOUSE

## Roof window\* type and performance value

Default roof windows\*

Window ID	Window	Window Maximum	<b>SHCC</b> *	Substitution tolerance ranges		
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Avail	able					
Custom roof v	vindows*					
Window ID	Window	Maximum	SUCC*	Substitution to	lerance ranges	
Window ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Avail	able					
NO Data Avai						

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

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R1.1	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen	EW-1	2700	4245	SE	0	Yes
Bedroom 1	EW-1	2700	2900	SE	10400.0300480335	No
Bedroom 1	EW-1	2700	3500	SW	0	No
Bedroom 1	EW-1	2700	1600	NW	0	No
Bedroom 2	EW-1	2700	3690	SW	4000	No
Living	EW-1	2700	3545	SE	2800	No
Living	EW-1	2700	3800	SW	0	No
Living	EW-1	2700	2900	NW	7300	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Single Skin Brick	54.81	No insulation
IW-002	Cavity brick	31.32	No Insulation
IW-003	Concrete Panel/Blocks filled, plasterboard	0.00	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen	Concrete Slab on Ground 200mm	14.71	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab on Ground 200mm	10.93	None	No Insulation	Ceramic Tiles 8mm
Bath/ldy	Concrete Slab on Ground 200mm	7.32	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 200mm	14.17	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Concrete Slab on Ground 200mm	11.26	None	No Insulation	Carpet+Rubber Underlay 18mm
Living	Concrete Slab on Ground 200mm	12.59	None	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction	Bulk insulation R-value	Reflective
	material/type	(may include edge batt values)	wrap* [yes/no]
Kitchen	Concrete, Plasterboard with Timber Frame	No insulation	

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6.8 Star Rating as of 23 Oct 2023

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Entry	Concrete, Plasterboard with Timber Frame	No insulation	
Bath/Idy	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 2	Concrete, Plasterboard with Timber Frame	No insulation	
Living	Concrete, Plasterboard with Timber Frame	No insulation	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed	
Kitchen	0	Exhaust Fans	150	Unsealed	
Bath/Idy	0	Exhaust Fans	150	Unsealed	

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Bedroom 1	1	900
Bedroom 2	1	900
Living	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.

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## 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 -		<b>Ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimur 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	



#### 0008751414-01 NatHERS Certificate 6.8 Star Rating as of 23 Oct 2023



### **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

	Australian Fenestration Rating Council
	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assassed 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	eatures 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 neating and cooling ducts.
СОР С	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.
	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.
	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity nput
	This is your homes rating without solar or batteries.
d d	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).
	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.
	see exposure categories below.
	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
s	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).
	errain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
	errain 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.
	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.
	a home that achieves a net zero energy value*.
	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value a	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 z	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the cone 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 c foil) ir	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides nsulative properties.
Roof window for s	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.
	ncludes neighbouring buildings, fences, and wing walls, but excludes eaves.
	or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
(SUGC) S	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 neat it transmits.
bits	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 b	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, out 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 th	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned a	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features p	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).
	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading eatures* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS<sup>®</sup> Certificate No. 0008751430-01

Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22)

## Property

Address

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

Plans

Main plan Prepared by Unit 5, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

BGH7W DTA Architects

## Construction and environment

### Assessed floor area [m2]\*

Conditioned\* 41.1 Unconditioned\* 7.4 Total 48.4 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



## Accredited assessor

 Name
 Dean Gorman

 Business name
 Greenview Consulting Pty Ltd

 Email
 dean@greenview.net.au

 Phone
 8544 1683

 Accreditation No.
 DMN/13/1645

 Assessor Accrediting Organisation
 Design Matters National

 Declaration of interest
 Declaration completed: no conflicts

**NCC Requirements** 

NCC provisions Strate/Territory variation Volume One

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

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

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 13.7 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	7.9	5.8
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	N/A
(lowest conditioned area)	IN/A
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=QsxZdoBhy . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 5, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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



#### 8.8 Star Rating as of 19 Oct 2023

····· · · · · · · · · · · · · · · · ·					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	Consen	Builder	Consent 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					

<b>0008751430-01 NatHERS Certificate 8.8 Star Rating as of</b> 19 Oct 2023					HOUVE		
	Approva	Il Stage	Construction Stage				
Certificate check	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other		
	Assess	Conser Survey	Builder	Conser Survey	Occupa		
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 Home performance assessment is not conducted)							
Appliances							
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?							
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the '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							

'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



## Room schedule

Room Zone Type		Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	22.07
Hallway	Daytime	6.09
Bedroom 1	Bedroom	12.92
Bath/Ldy	Unconditioned	7.36
Glazed Common A	Glazed Common Area	12.61

## Window and glazed door type and performance

#### Default windows\*

Window ID		Maximum	SHGC*	Substitution to	Substitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit		
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60		
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74		

#### Custom windows\*

Window ID	Window	Maximum	SHGC* -	Substitution tolerance ranges		
window iD	Description	Description U-value*		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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NW	No
Bedroom 1	ALM-001-01 A	n/a	1200	1690	Awning	45	NW	No
Bath/Ldy	ALM-001-01 A	n/a	800	730	Awning	90	SW	No
Glazed Common A	ALM-001-01 A	n/a	2400	930	Awning	45	SE	No
Glazed Common A	ALM-002-01 A	n/a	2400	540	Awning	00	SE	No
Glazed Common A	ALM-001-01 A	n/a	2400	815	Awning	60	SW	No
Glazed Common A	ALM-002-01 A	n/a	2400	815	Awning	00	SW	No

# HOUSE

## Roof window\* type and performance value

Default roof windows\*

Window ID     Mindow     Maximum     SHGC*     SHGC lower limit     SHGC used limit       No Data Available     Custom roof windows*       Window ID     Window     Maximum     SHGC*     Substitution tolerance rank	inner limi
Custom roof windows* Window ID Window Maximum SHGC* Substitution tolerance rar	whee uuu
Window ID Window Maximum SHGC* Substitution tolerance rar	
Window ID SHGC*	
WINDOW ID	nges
Description U-value* SHGC lower limit SHGC u	upper limi <sup>.</sup>
No Data Available	

#### Window Opening Outdoor Window Height Width Indoor Location Orientation ID % [mm] [mm] shade shade no. 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 Avail	able					

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	3445	NW	3200	No
Hallway	EW-1	2700	1590	SW	0	No
Bedroom 1	EW-1	2700	4045	SW	0	No
Bedroom 1	EW-1	2700	3600	NW	0	No
Bedroom 1	EW-1	2700	800	NE	3500	No
Bath/Ldy	EW-1	2700	2090	SW	0	No
Glazed Common A	EW-1	2700	1300	SE	0	No
Glazed Common A	EW-1	2700	2045	SW	0	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Cavity brick	14.31	No Insulation
IW-002	TimberStud Frame, Brick Veneer	0.00	No insulation
IW-003	Single Skin Brick	42.66	No insulation
IW-004	Concrete Panel/Blocks filled, plasterboard	0.00	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 200mm	22.07	None	No Insulation	Ceramic Tiles 8mm
Hallway	Concrete Slab on Ground 200mm	6.09	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 200mm	12.92	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath/Ldy	Concrete Slab on Ground 200mm	7.36	None	No Insulation	Ceramic Tiles 8mm
Glazed Common A	Concrete Slab on Ground 200mm	12.61	None	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction	Bulk insulation R-value	Reflective
	material/type	(may include edge batt values)	wrap* [yes/no]
Kitchen/Living	Concrete, Plasterboard with Timber Frame	No insulation	

0008751430-01 NatHERS Certificate

8.8 Star Rating as of 19 Oct 2023

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Hallway	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	
Bath/Ldy	Concrete, Plasterboard with Timber Frame	No insulation	
Glazed Common A	Concrete, Plasterboard with Timber Frame	No insulation	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bath/Ldy	0	Exhaust Fans	450	Unsealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Kitchen/Living	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	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available				

Appliance/ system type	Lo	cation Fu	uel type	eff	inimum ficiency/ formance		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	Assessec daily loac [litres]
No Data Available							
Pool/spa equipment							
Appliance/ system type		Fuel type		Minimu efficiene performa	cy/	Recomm capad	
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\*.

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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
Assessed noor area	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	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. 0008751448-01

Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22)

## Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 6, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

## Plans

Main plan Prepared by BGH7W DTA Architects

## Construction and environment

### Assessed floor area [m2]\*

Conditioned\* 43.4 Unconditioned\* 7.4 Total 50.8 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



## Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

**NCC Requirements** 

NCC provisions Strate/Territory variation Volume One

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

6.4 The more stars the more energy efficient

# NATIONWIDE HOUSE ENERGY RATING SCHEME

# 34.3 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
lodelled	22.9	11.4
oad limits	N/A	N/A

#### Features determining load limits

Floor Type	N/A
(lowest conditioned area)	IN/A
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=gjXVxAoie . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 19 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 6, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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



#### 6.4 Star Rating as of 19 Oct 2023

····· · · · · · · · · · · · · · · · ·					HOUSE
Certificate check	Approva	al 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	Conseni Surveyo	Builder	Conseni Surveyc	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					



0008751448-01 NatHERS Certificate6.4 Star Rating as of 19 Oct 2023					HOUSE
	al Stage	Constru Stage	ction		
Certificate check	hecked	ithority/ hecked	cked	uthority hecked	/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 perform	ance asse	ssment is i	not conduc	cted)
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 the	t must also	he satisfied	linclude

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



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	23.87
Hallway	Daytime	5.69
Bedroom 1	Bedroom	13.86
Bath/Ldy	Unconditioned	7.36
Glazed Common A	Glazed Common Area	13.83

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Maximum SHGC		Substitution to	bstitution tolerance ranges		
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit		
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60		
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74		

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
window iD	Description	U-value*	3660	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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NW	No
Bedroom 1	ALM-001-01 A	W1	800	1810	Awning	10	SW	No
Bedroom 1	ALM-001-01 A	n/a	1200	1690	Awning	10	NW	No
Bath/Ldy	ALM-001-01 A	n/a	800	730	Awning	90	SW	No
Glazed Common A	ALM-001-01 A	n/a	2400	930	Awning	45	SE	No
Glazed Common A	ALM-002-01 A	n/a	2400	540	Awning	00	SE	No
Glazed Common A	ALM-001-01 A	n/a	2400	815	Awning	60	SW	No
Glazed Common A	ALM-002-01 A	n/a	2400	815	Awning	00	SW	No

# HOUSE

## Roof window\* type and performance value

Default roof windows\*

Window ID	Window	Maximum	<b>SHCC</b> *	Substitution tolerance range	
window ID	Description U-value* SHGC* -		SHGC lower limit	SHGC upper limit	
No Data Avail	able				
Custom roof w	/indows*				
	Window	Maximum	81100*	Substitution to	lerance ranges
Mindaw ID			SHGC*	SHGC lower limit	SHGC upper limit
Window ID	Description	U-value*		SHGC lower limit	onoo upper innit
Window ID No Data Avail	-	U-value*		Shige lower limit	once upper im
	-	U-value*		SHGC lower limit	

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
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	3495	NW	3200	No
Hallway	EW-1	2700	1690	SW	1400	No
Bedroom 1	EW-1	2700	4095	SW	1400	No
Bedroom 1	EW-1	2700	3600	NW	900	No
Bedroom 1	EW-1	2700	800	NE	3500	No
Bath/Ldy	EW-1	2700	2190	SW	1400	No
Glazed Common A	EW-1	2700	1300	SE	0	No
Glazed Common A	EW-1	2700	2095	SW	1400	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Cavity brick	14.31	No Insulation
IW-002	Timber Stud Frame, Direct Fix Plasterboard	48.60	No insulation
IW-003	Concrete Panel/Blocks filled, plasterboard	0.00	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	23.87	None	No Insulation	Ceramic Tiles 8mm
Hallway	Concrete Slab, Unit Below 200mm	5.69	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	13.86	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath/Ldy	Concrete Slab, Unit Below 200mm	7.36	None	No Insulation	Ceramic Tiles 8mm
Glazed Common A	Concrete Slab, Unit Below 200mm	13.83	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]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Hallway	Plasterboard on Timber	Bulk Insulation R2.5	

0008751448-01 NatHERS	Certificate 6.4 Star R	tating as of 19 Oct 2023	HIOLUSE
Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bedroom 1	Plasterboard on Time	ber Bulk Insulation R2.5	
Bath/Ldy	Plasterboard on Timb	ber Bulk Insulation R2.5	
Glazed Common A	Plasterboard on Time	ber Bulk Insulation R2.5	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Bath/Ldy	0	Exhaust Fans	450	Unsealed

## **Ceiling** fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absorptance Roof shade[colour]		
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	50	Medium	

## Thermal bridging schedule for steel frame elements

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

## Appliance schedule

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

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

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available				
Heating system				
Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity



#### Hot water system

Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3				ubstitution e ranges	Assessed daily load	
		CER Zone	/STC	310	lower limit	upper limit	[litres]			
No Data Available										
Pool/spa equipment										
Appliance/ system type		Fuel type		Minimu efficienc performa	cy/	Recomm capac				
No Data Available										
Onsite Renewable	Energy Sch	edule								

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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## Glossary

Annual energy load the inerate of animal drama visual visualized for heating and cooling, based on standard occupancy assumptions. Assessed floor area Assessed floor area in the design documents. Colling penetrations Confidence of the design documents. Colling penetrations Confidence of the design documents. Colling penetrations Confidence of the design documents. Confidence of the design document document document document document document documents. Confidence of the design document documen	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 sore 10 me.g. cut yand industrial areas.           Provisional value         The refurct as spacing to the functional bading for the noticing, and alcohed Class '04 buildings and alcohed Class '04 buildings.		
Assessed hold area         floor area in the design documents.           Calling penetrations         features that require a penetration to the celling, including downlights, wents, exhaust fans, range hoods, chimneys and flues. Excludes fittures attached to the celling, including downlights, wents, exhaust fans, range hoods, chimneys and flues.           COP         Coefficient of performance         a core within a dwelling that is expected to require healing 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.           Energy use         The is our homes rating without solar or batteries.           Energy use         The is our homes rating without solar or batteries.           Energy use         The is our homes rating without solar or batteries.           Energy use         The is our 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 ACE Housing Provisions Standard).           Exposure category – exposed         Enrain with numerous, closely spaced obstructions over 10 me g, city and inductarial areas.           Exposure category – exposed         Enrain w		
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 these signity ventilation benefits in the modeling software and must not be modelied as a door when opening to a minimally very exposure category - exposed terrain with no obstructions se g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category - protected         terrain with wo obstructions sele/with e.g. grassiand with few well scattered obstructions below 10m, farmland with actered shead, lightly vegetated bushland areas.           Exposure category - protected         terrain with no obstructions below tore is a swellar height in the noreal durations allow obstructions below 10m, farmland with excettered shead, lightly vegetated obstructions below 10m, farmland with excettered shead, lightly vegetated obstructions below 10m, fa	Assessed floor area	
Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some dricrumstances 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 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         the net ABCB Housias 2 building.           Exposure category – protected         terrain with no obstructions at a similar height e.g. grasslands with fow well scattered obstructions below 10m, farmland with scattered obstructions at a similar height e.g. grasslands with fow obstructions at a similar height e.g. eaves, eaves, carendals, pergolas, carports, or overhangs or balconies from upper levels.           Exposure category – protected         terrain with numerous, closely spaced obstructions end to musing. Heavily vegetated bush holding in the horizontal plane, e.g. eaves, vernadhs, pergolas, carports, or overhangs or balconies from upper levels.           NtCor locas         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software modelis NCC C Class 1, 2 whu	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 new Code or operable (multimg and the bas 10 buildings or operable (multimg and the bas).           Reposure category - protected         terrain with numerous, closely spaced obstructions below flom e.g. suburban tousing, heavily vegetated bushland areas.           Retrost nucleon Code (NCC) Cl	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.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 literain with numerous; closely spaced obstructions over 10 m e.g. above 3 floors), and a material ereas.           Exposure category – ponet         terrain with numerous; closely spaced obstructions over 10 m e.g. above 3 floors), and a standard of the openability preventage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Antioner Bhad and floar at a single and attached Class 10 abuildings. Definitions can be found at www.abcb gov.au.	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	
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 vertilated 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.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 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 10a buildings. Definitions can be found at www.abcb.gov au.           Recommended capacity         a home that achieves a net zero energy value*.           Opening percentage         the openability percenting the modelled. Acceptable provisional value or zones serviced. This is a recommendation and the final sele	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 in vith no obstructions seg. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no work 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. clovely and industrial areas.           Horizontal shading feature         provides shading to the buildings in the thorizontal plane, e.g. eaves, 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.abcl. gou 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 in selection sizing should be contimed by a suitably qualified period.           Reflective wrap (also known as roof lights) <tho< th=""><th>EER</th><th></th></tho<>	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 categories below.           Exposure category – exposed         terrain with no obstructions et 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 31 foors).           Exposure category – protected         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.           Provisional Construction Code         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           National Construction Code         terrain with a unmerous, closely spaced obstructions over 10m e.g. city and industrial areas.           National Construction Code         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           National Construction Code         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           National Construction Code         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           National Construction Code         terrain with numerous, closely spaced obstructions encloses in a subicing.           National Construction Code	Energy use	
Entrance door         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 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 – open         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburba         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           Noticos S         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           National Construction Code         the NCC groups buildings that tached Class 10 ab buildings. Definitions can be found at tww.abots 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 dees not represent an actual value. For example, if the wall colour is unspecified in the documentation, a grow 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 zone or zones	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.           Motizonal 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 tatched Class 10 ab buildings. Definitions can be found at www.abcb.gova.u.           Net zero home         a home that achieves a net zero energy value*.           Openning percentage         the openability percentage or operable (moves) and acue. For example, if the wall colour is unspecified in the documentation, a provisional value           Recommended capacity         rsi a buildings. flores, and wing walls, but exclude by 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 lights) for NatHERS this is typically an operable (moves).         can be oppleid to walls, roofs and ceilings. When combined with an appropriate airgap		ventilated córridor 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 outentation, a provisional value at meediam' mest be modelled. Acceptable provisional values are cultimed in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as icoll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides in the factore of indives.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Solar heat gain coefficient (SHGC)         specifical and and melling in the horizer eaves of a diffuser.           Reflective wrap (also known as roof lights) for NatHERS this is typically a mouled unit with fiexible ref	Exposure	
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 below 10m 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         National Construction Code       Class 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 or there are donors 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 cullined in the NatHERS technical Note and 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.         Roof window       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stading 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. <th>Exposure category – exposed</th> <th></th>	Exposure category – exposed	
Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial area.           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         the NCC proups 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.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 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 zone or zones serviced. This is a recommended toin and the final selection szing 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 arediation admitted through a window, both directly transmitted as well as absorbed and subsequent (SHGC)           Shading features         includes neighbouring buildings, fo	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           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 bactene speciated by the Clean Energy Regulator (CER		
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 wel	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		
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		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)         undential breaks	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 and can be found at www.nathers.gov.au
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         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.           usconditioned         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, weight on (protected or listed heritage trees).           window shat provides shading e.g. window stat provides shading e.g. window awinings or screens but excludes horizontal* or vertica		
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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.         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		
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		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)
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 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 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. 0008751372-01

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

## Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 7, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

## Plans

Main plan Prepared by BGH7W DTA Architects

## Construction and environment

Assessed floor area [m2]\* Conditioned\* 68.4 Unconditioned\* 0.0 Total 68.4 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



## Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume One

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

# 17.2 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	6.7	10.5
Load limits	N/A	N/A

### Features determining load limits

Floor Toma	
Floor Type	N/A
(lowest conditioned area)	DV/A
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=OYqMUWwAF. When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 7, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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



#### 8.4 Star Rating as of 23 Oct 2023

····· · · · · · · · · · · · · · · · ·	_		_		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	<u>6</u>	л	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					

0008751372-01 NatHERS Certificate8.4 Star Rating as of 23 Oct 2023					HOUSE	
	Approva	I Stage	Construe Stage	ction		
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 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 performance assessment is not conducted)						
Appliances						
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?						
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the '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 assessment)

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



## Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	25.27
Bath/Ldy	Daytime	6.83
Entry	Daytime	9.93
Bedroom 1	Bedroom	15.32
Bedroom 2	Bedroom	11.01

# 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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60	
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74	

#### Custom windows\*

Window ID	Window	Maximum	SHGC* -	Substitution tolerance ranges		
window iD	Description	Description U-value*		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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2400	Awning	45	NE	No
Kitchen/Living	ALM-001-01 A	n/a	800	970	Awning	90	NW	No
Kitchen/Living	ALM-002-01 A	n/a	800	1810	Awning	00	NW	No
Bedroom 1	ALM-001-01 A	n/a	1400	1810	Awning	10	NE	No
Bedroom 2	ALM-001-01 A	n/a	1400	2410	Awning	10	NE	No

## Roof window\* type and performance value

#### Default roof windows\*

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

\* Refer to glossary. Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 7, 20-22 Raymond Street , Eastwood , NSW , 2122



Custom 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					

## 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 Avail	able					

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	3595	NE	4200	No
Kitchen/Living	EW-1	2700	7400	NW	0	No
Bedroom 1	EW-1	2700	3700	NE	0	No
Bedroom 1	EW-1	2700	600	SE	3100	No

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8.4 Star Rating as of 23 Oct 2023



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bedroom 1	EW-1	2700	700	NW	3600	No
Bedroom 2	EW-1	2700	3095	NE	600	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	48.06	No insulation
IW-002	Cavity brick	38.61	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	25.27	None	No Insulation	Ceramic Tiles 8mm
Bath/Ldy	Concrete Slab, Unit Below 200mm	6.83	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab, Unit Below 200mm	9.93	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	15.32	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Concrete Slab, Unit Below 200mm	7.01	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Suspended Concrete Slab 200mm	4.00	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]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Bath/Ldy	Plasterboard on Timber	Bulk Insulation R2.5	
Entry	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 1	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 2	Plasterboard on Timber	Bulk Insulation R2.5	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed

0008751372-01 NatHERS Cert	tificate 8	3.4 Star Rating as of 23 Oct 2023			HOUSE
Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed	
Bath/Ldy	0	Exhaust Fans	150	Unsealed	

## **Ceiling** fans

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

## Roof type

Construction	Added insulation [R-value]	Solar absorptan	ce Roof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	50	Medium

## Thermal bridging schedule for steel frame elements

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

## Appliance schedule

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

Note: A flat assumption of 5W/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/ 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 CER Zon	Minimum efficiency ne /STC	Zone 3 STC		<b>ibstitution</b> e ranges upper limit	Assessed daily load [litres]
No Data Available						аррег шпп	[intreo]

CITE .



#### 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 insert of annual veguined for heating and cooling, based on standard occupancy assumptions. Assessed floor area Assessed floor area in the design documents. Caling penetrations features that require a penetration to the ceiling including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes futures attached to the ceiling with small holes through the ceiling for wining, e.g. ceiling fans, pendant lights, and 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 gardges. Custom windows windows listed in NaHERS software that are available on the market in Austallia and have a WERS (Window Energy Rating Default windows windows listed in NaHERS software that are available on the market in Austallia and have a WERS (Window Energy Rating Default windows windows listed in NaHERS software that are available on the market in Austallia and have a WERS (Window Energy Rating Default windows windows listed in NaHERS software that are available on the market in Austallia and have a WERS (Window Energy Rating Default windows windows windows windows and the representative of a specific type of window product and whose properties have been derived by statistical methods. It are representative of a specific type of window rotuct and whose more intervised 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 This is your homes rating without solar or batteries. Energy value These signify explores Standard). Exposure category – penceted terrain with numerous, closely papeed obstructions below to the modelied as a door when opening to a minimally verificited corridor in a class 2 building. Exposure category – protected terrain with numerous, closely papeed obstructions periods, devert approach, and yous	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         Earlures that require a penetration to the ceiling, including downlights, wens, exhaust fans, range hoods, chimneys and flues.           Conditional         Constraint the design documents.         Earlures that require a penetration to the ceiling with shall holes through the ceiling for wring, e.g. ceiling fans, benchmark (bits, and ceiling with a sequence).         Constraint (bits, and ceiling with a sequence).           Conditional         a zone within a welling with a lis expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garges.           Custom windows         Windows listen in welling with shall are representative of a specific type of window product and whose properties have been derived by statistical methods.           Default windows         This is your homes rating without solar or batteries.           Energy value         The net cost to societly 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 obstructions e.g. flig razing allow costs to the building user, the environment and energy networks (as therain system) and the obstructions e.g. glig razing allows with flow well sates of obstructions below 100 floors).           Exposure category – open         terrain with numerous, closely spaced obstructions below 100 m, cates all		
Assessed hold area         floor area in the design documents.           Calling penetrations         features that require a penetration to the colling, including downlights, wents, exhaust fans, range holds, chimneys and flues. Excludes fittures attached to the celling, including downlights, wents, exhaust fans, range holds, chimneys and flues.           COP         Coefficient of performance           Could on the advelling that is expected to require healing and cooling based on standard occupancy assumptions. In some dircumstances 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.           Energy use         This is vurthomes 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 AGC Housing Provisions Standard).           Exposure category – exposed         Emarative that no obstructions e g. and graning land. cosent-drontage, desert. avocal high regional provisions Standard).           Exposure category – exposed         Errain with numerous, closely spaced obstructions over 10 m e g. of youthorial networks (are defined in the solutions e g. and graning land. cosent-drontage, desert, avocal high regions, having veglated built holds, efficiency and the solution a class 1000 regions (assistication condic).		
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, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input.           Energy efficiency ratio a cooling can be achieved by an air conditioner for a single kWh of electricity input.           Energy efficiency ratio a cooling can be achieved by an air conditioner for a single kWh of electricity input.           Energy end to a cool to accide the solution.         The sing sour homes rating without solar or batteries.           Energy end to a cool to accide the solution.         The sing sour homes rating without solar or batteries.           Energy end to a cool to accide the solution.         The sing sour homes rating without solar or batteries.           Energy end to a cool to accide the solution.         The sing source category = solution.           Exposure category - protected         terrain with ne obstructions below.	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 garges.           Custom windows         windows listed in Natt/ERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.           Default windows         mightows that are representative of a specific type of window product and whose properties have been derived by statistical indives.           ERR         Energy Enclosely 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).           Exposure         see signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally traver and the obstructions below thin. See statement with no obstructions below thin the obstructions below thin the obstructions below thin.           Exposure         see signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally traver and the dow bank constructions below thin.           Exposure         see signify ventilation beging to gargestands with few well scattered obstructions below tom.           Exposure category – open         terrain with numerous, closely spaced obstructions below tone s.           Exposure category – potenter         terain with numerous, closely spaced obstructions ower 10 m e	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         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 input.           ERR         Energy Efficiency Ratio, measure of how much ocoling can be achieved by an air conditioner for a single KWh of electricity input.           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).           Entrance door         these signify ventilation beeneffits 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 – protected         terrain with numerous, closely spaced obstructions below Tom, farmland with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below Tom, farmland with for upper levels.           Noticonal Construction Code (NCC) Class 1.         terrain with numerous, closely spaced obstructions below Tom e.g. ety and industrial areas.           Provisional value         terrain with numerous, closely spaced obstructions allow english, exposis, for overhangs or balconies from upper levels.	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.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 literain with numerous; closely spaced obstructions over 10 m e.g. above 3 floors), and a material ereas.           Exposure category – ponet         terrain with numerous; closely spaced obstructions over 10 m e.g. above 3 floors), and a standard of the openability preventage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Antioner Bhad and floar at a single and attached Class 10 abuildings. Definitions can be found at www.abcb gov.au.	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 do obstructions below 10m, familand with texposure category – open           Exposure category – open         terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed do obstructions below 10m, familand with texposure category – potent           Horizontal shading feature         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.           An terrain with a calcieves an et zero energy value <sup>*</sup> .         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An some that calcieves an et zero energy value <sup>*</sup> .         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           An some that calcieves an et zero energy value <sup>*</sup> . <th>Custom windows</th> <th></th>	Custom windows	
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 vertilated 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.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 1.2 or 4 buildings their function and use, and assigns a classification code. NatHERS software models NCC class 1.2 or 4 buildings. Definitions can be found at www.abcb.gov au.           Provisional value         a home that achieves a net zero energy value*.           Opening percentage         the openability percenting the modelled. Acceptable provisional value or induced in the ABCE Movemability percentaled cons to a buildings. Definitions can be found at www	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 in vith no obstructions seg. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with no work 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. clovely and industrial areas.           Horizontal shading feature         terrain with numerous, closely spaced obstructions over 10 m e.g. clovely, and industrial areas.           Net zero home         a home that achieves a net zero energy value*.           Opening percentage         the ox clove shading to the duildings and attached Class 10 abuildings. Definitions can be found at www.abcl.gov.au.           Recommended capacity         a sumed value that does not represent an actual value. A creapsing value with a appropriate airgap and emissivity value, it provides instanding value that does not represent an actual value. A close space on windows that is used in ventilation calculations.           Recommended capacity         can building features         is a recommendat	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 categories below.           Exposure category – exposed         terrain with no obstructions et 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 31 foors).           Exposure category – protected         terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.           Horizontal shading feature         Drovides 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         CC 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 <sup>*</sup> .           Opening percentage         the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.           Provisional value         or zones service. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified and the zone or zones service. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified and that achieve the desired comfort conditions in the zone or zones service. This is is trecommended dive.	Energy use	
Entrance door         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 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 – open         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           Exposure category – suburba         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           Noticos S         terrain with numerous, closely space obstructions over 10 m e.g. city and industrial areas.           National Construction Code         the NCC groups buildings that tached Class 10 ab buildings. Definitions can be found at tww.abots 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 dees not represent an actual value. For example, if the wall colour is unspecified in the documentation, a grow 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 zone or zones	Energy value	
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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, 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 outentation, a provisional value at meediam' mest be modelled. Acceptable provisional values are cultimed in the NatHERS Technical Note and can be found at www.nathers.gov.au           Reflective wrap (also known as icoll)         can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides in the factore of indives.           Shading features         includes neighbouring buildings, fences, and wing walls, but excludes eaves.           Solar heat gain coefficient (SHGC)         specifical and and melling in the horizer eaves of a diffuser.           Reflective wrap (also known as roof lights) for NatHERS this is typically a mouled unit with fiexible ref	Exposure	
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 below 10m 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         National Construction Code       Class 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 or there are donors 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 cullined in the NatHERS technical Note and 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.         Roof window       for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.         Stading 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. <th>Exposure category – exposed</th> <th></th>	Exposure category – exposed	
Exposure category – suburban         terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial area.           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         the NCC proups 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.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 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 zone or zones serviced. This is a recommended toin and the final selection szing 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 arediation admitted through a window, both directly transmitted as well as absorbed and subsequent (SHGC)           Shading features         includes neighbouring buildings, fo	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           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 limitled to, materials such as timber battens greater than or equal to 20mm thick or cont		
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.
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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)         undential breaks	Opening percentage	
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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
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Window shading 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. 0008751380-01

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

## Property

Address

Lot/DP NCC class\* Floor/all Floors Type Unit 8, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34,35 DP 35375 2 G of 1 floors New Home

#### Plans

Main plan Prepared by BGH7W DTA Architects

## Construction and environment

Assessed floor area [m2]\* Conditioned\* 52.5 Unconditioned\* 0.0 Total 52.5 Garage 0.0 Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



#### Accredited assessor

NameDean GormanBusiness nameGreenview Consulting Pty LtdEmaildean@greenview.net.auPhone8544 1683Accreditation No.DMN/13/1645Assessor Accrediting OrganisationDesign Matters NationalDeclaration of interestDeclaration completed: no conflicts

## **NCC Requirements**

NCC provisions Strate/Territory variation Volume One

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

## 13.5 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	4.0	9.5
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	N/A
(lowest conditioned area)	DV/A
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=iiTtwBNak . When using either link, ensure you are visiting hstar.com.au



\* Refer to glossary Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22) for Unit 8, 20-22 Raymond Street , Eastwood , NSW , 2122



#### 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:
  - ICC Climate Zone 1 of
    - 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



#### 8.8 Star Rating as of 23 Oct 2023

					HOUSE
Certificate check	Approva	al 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.	Assess	Consen Surveyo	Builder	Consen Surveyo	Occupa
Genuine certificate check	л	<u>.</u>	<u>.</u>	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					

0008751380-01 NatHERS Certificate8.8 Star Rating as of 23 Oct 2023					HOUSE
	Approva	I Stage	Constru Stage	ction	
Certificate check	recked	thority/ lecked	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 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)		
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



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	25.27
Bedroom 1	Bedroom	13.86
Entry	Daytime	6.02
Bath/Ldy	Daytime	7.36

## Window and glazed door type and performance

#### Default windows\*

Window ID	Window	Window Maximum SHGC*		Substitution tolerance ranges		
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60	
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74	

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3160	SHGC lower limit SHGC upper		
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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NE	Yes
Bedroom 1	ALM-001-01 A	n/a	1400	1810	Awning	10	NE	No

## Roof window\* type and performance value

#### Default roof windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges	
	Description	U-value*	3660	SHGC lower limit	SHGC upper limit	
No Data Avail	lable					
Custom roof w	vindows*					
Custom roof w	vindows* <b>Window</b>	Maximum	SHGC*	Substitution to	lerance ranges	



## Roof window\* schedule

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

## Skylight\* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

## Skylight\* schedule

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

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	2400	NW	100	No
Kitchen/Living	EW-1	2700	3595	NE	3500	Yes
Bedroom 1	EW-1	2700	700	NW	3700	No
Bedroom 1	EW-1	2700	3600	NE	100	Yes
Bedroom 1	EW-1	2700	600	SE	0	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Cavity brick	39.69	No Insulation

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-002	Timber Stud Frame, Direct Fix Plasterboard	30.24	No insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	25.27	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	13.86	None	No Insulation	Carpet+Rubber Underlay 18mm
Entry	Concrete Slab, Unit Below 200mm	6.02	None	No Insulation	Ceramic Tiles 8mm
Bath/Ldy	Concrete Slab, Unit Below 200mm	7.36	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]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 1	Plasterboard on Timber	Bulk Insulation R2.5	
Entry	Plasterboard on Timber	Bulk Insulation R2.5	
Bath/Ldy	Plasterboard on Timber	Bulk Insulation R2.5	

## Ceiling penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed

## Ceiling fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 1	1	900

## Roof type

Construction	Added insulation [R-value]	Solar absorptan	ce Roof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	50	Medium



## Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

Note: A flat assumption of 5W/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	ystem type Location Fuel type		uel type	eff	nimum iciency/ ormance	Recommended capacity	
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**

#### 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.
	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
Assessed floor area	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* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0008751406-01

Unit 9, 20-22 Raymond Street,

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

#### Property

Address

Lot/DP NCC class Floor/all Floors Type

Eastwood , NSW , 2122 Lot 34.35 DP 35375 2 G of 1 floors New Home

#### Plans

Main plan Prepared by BGH7W DTA Architects

## Construction and environment

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

Conditioned\* 66.4 Unconditioned\* 7.7 74.1 Total Garage 0.0

Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



#### Accredited assessor

Dean Gorman Name **Business name** Greenview Consulting Pty Ltd Email dean@greenview.net.au Phone 8544 1683 Accreditation No. DMN/13/1645 Assessor Accrediting Organisation **Design Matters National Declaration of interest** Declaration completed: no conflicts

## NCC Requirements

NCC provisions Strate/Territory variation Volume One

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.

Star rating

The more stars

the more energy efficient

NATIONWIDE

Thermal performance

24.1 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	15.6	8.4
Load limits	N/A	N/A

#### Features determining load limits

Floor Type	N/A
(lowest conditioned area)	IN/A
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=AVMFYIUDL 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:
  - ICC Climate Zone 1 of
    - 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



#### 7.6 Star Rating as of 23 Oct 2023

Certificate check	Approva	I Stage	Constru Stage	ction	HINDUSE
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					
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					

0008751406-01 NatHERS Certificate       7.6 Star Rating as of 23 Oct 2023					HOUVE
	Approva	I Stage	Constru Stage	ction	
Certificate check	cked	ority/ cked	ed	ority 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 ti	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



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]
Kitchen/Living	Kitchen/Living	26.47
Bedroom 1	Bedroom	14.21
Bath/Ldy	Unconditioned	7.7
Hall	Daytime	5.24
Bedroom 2	Bedroom	12.83
Entry	Daytime	7.62

## 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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution to	lerance ranges
	Description	U-value*	3660	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*
Kitchen/Living	ALM-002-01 A	n/a	2400	2410	Awning	45	NE	Yes
Bedroom 1	ALM-001-01 A	n/a	1800	1810	Awning	10	NE	No
Bedroom 1	ALM-002-01 A	n/a	800	1810	Awning	00	SE	No
Bath/Ldy	ALM-001-01 A	n/a	800	730	Awning	90	SE	No
Bedroom 2	ALM-001-01 A	n/a	1200	1690	Awning	10	SE	No

## Roof window\* type and performance value

#### Default roof windows\*

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



Default roof windows\*

Window ID Window		Maximum	SUCC*	Substitution tolerance ranges		
	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
Custom roof wi	indows*					
Window ID	Window	Maximum	SUCC*	Substitution tolerance range		
Window ID	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
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R0.7	No

## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	3595	NE	3500	Yes

0008751406-01 NatHERS Certificate

7.6 Star Rating as of 23 Oct 2023



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bedroom 1	EW-1	2700	2700	NW	3600	No
Bedroom 1	EW-1	2700	3600	NE	0	Yes
Bedroom 1	EW-1	2700	4195	SE	0	No
Bath/Ldy	EW-1	2700	2295	SE	0	No
Bath/Ldy	EW-1	2700	300	SW	1700	No
Hall	EW-1	2700	1690	SE	0	No
Bedroom 2	EW-1	2700	300	NE	1700	No
Bedroom 2	EW-1	2700	3800	SE	0	No
Bedroom 2	EW-1	2700	1900	SW	0	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	64.26	No insulation
IW-002	Cavity brick	27.27	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	26.47	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	14.21	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath/Ldy	Concrete Slab, Unit Below 200mm	7.70	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab, Unit Below 200mm	5.24	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 200mm	12.83	None	No Insulation	Carpet+Rubber Underlay 18mm
Entry	Concrete Slab, Unit Below 200mm	7.62	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]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 1	Plasterboard on Timber	Bulk Insulation R2.5	

0008751406-01 NatHERS Certificate 7.6 Star Rating as of 23 Oct 2023 Reflective Construction **Bulk insulation R-value** Location (may include edge batt values) material/type wrap\* [yes/no] Bath/Ldy Plasterboard on Timber **Bulk Insulation R2.5** Plasterboard on Timber **Bulk Insulation R2.5** Hall Bedroom 2 **Bulk Insulation R2.5** Plasterboard on Timber Entry Plasterboard on Timber Bulk Insulation R2.5

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed
Bath/Ldy	0	Exhaust Fans	150	Unsealed

## **Ceiling** fans

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

## Roof type

Construction	Added insulation [R-value]	Solar absorptan	ce Roof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	50	Medium

## Thermal bridging schedule for steel frame elements

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

## Appliance schedule

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

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

#### Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available				

\* Refer to glossary.

Appliance/ system type	Lo	cation Fi	uel type	eff	inimum ficiency/ 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 efficiene performa	cy/	Recomm capad	
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.

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#### Glossary

	Australian Fenestration Rating Council
	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assassed 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	eatures 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 neating and cooling ducts.
СОР С	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.
	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.
	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity nput
	This is your homes rating without solar or batteries.
d d	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).
	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.
	see exposure categories below.
	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
s	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).
	errain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
	errain 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.
	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.
	a home that achieves a net zero energy value*.
	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value a	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 z	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the cone 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 c foil) ir	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides nsulative properties.
Roof window for s	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.
ž	ncludes neighbouring buildings, fences, and wing walls, but excludes eaves.
	or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
(SUGC) S	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 neat it transmits.
bits	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 b	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, out 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 th	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned a	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features p	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).
	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading eatures* (eg eaves and balconies)

## Nationwide House Energy Rating Scheme<sup>®</sup> NatHERS® Certificate No. 0008751422-01

Generated on 23 Oct 2023 using BERS Pro v5.1.5 (3.22)

#### Property

Address

Lot/DP NCC class' Floor/all Floors Type

Unit 10, 20-22 Raymond Street, Eastwood , NSW , 2122 Lot 34.35 DP 35375 2 G of 1 floors New Home

#### Plans

Main plan Prepared by BGH7W DTA Architects

## Construction and environment

Assessed floor area [m2]\* Conditioned\* 73.4 Unconditioned\* 0.0 Total 734

0.0

Exposure type Suburban

NatHERS climate zone 56 Mascot (Sydney Airport)



Garage

#### Accredited assessor

Dean Gorman Name **Business name** Greenview Consulting Pty Ltd Email dean@greenview.net.au Phone 8544 1683 Accreditation No. DMN/13/1645 Assessor Accrediting Organisation **Design Matters National Declaration of interest** Declaration completed: no conflicts

NCC Requirements

NCC provisions Strate/Territory variation Volume One

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

31.9 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	28.5	3.4
Load limits	N/A	N/A

#### Features determining load limits

The second se	
Floor Type	N/A
(lowest conditioned area)	IN/A
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=mISFGUiqn 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:
  - ICC Climate Zone 1 of
    - 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



#### 6.8 Star Rating as of 23 Oct 2023

			Constant		HOUSE
Certificate check	Approva	I Stage	Construe Stage	cuon	
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	Оссиран
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					

0008751422-01 NatHERS Certificate6.8 Star Rating as of 23 Oct 2023					HOUVE
	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)	ñ
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	cted)
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	ň	ň	ň	ň	ñ

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



#### Room schedule

Room	Zone Type	Area [m <sup>2</sup> ]	
Kitchen/Living	Kitchen/Living	28.55	
Entry	Daytime	11.11	
Bath/Idy	Daytime	7.49	
Bedroom 1	Bedroom	14.48	
Bedroom 2	Bedroom	11.74	

## 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	
	Aluminium A DG Air Fill					
ALM-003-03 A	High Solar Gain low-E -	4.3	0.47	0.45	0.49	
	Clear					
	Aluminium B DG Air Fill					
ALM-004-03 A	High Solar Gain low-E -	4.3	0.53	0.50	0.56	
	Clear					

#### Custom windows\*

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
Window ID	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*
Kitchen/Living	ALM-004-03 A	n/a	2400	2170	Awning	45	NW	No
Kitchen/Living	ALM-003-03 A	n/a	800	1700	Awning	45	SE	No
Kitchen/Living	ALM-003-03 A	n/a	800	1690	Awning	45	SE	No
Kitchen/Living	ALM-003-03 A	n/a	1200	730	Awning	10	SW	No
Bedroom 1	ALM-003-03 A	n/a	1200	1330	Awning	10	SW	No
Bedroom 2	ALM-004-03 A	n/a	1800	1810	Awning	30	SW	No

## Roof window\* type and performance value

Default roof windows\*

	Window		Maximum	01100	**	Substitution tolerance ranges			
Window ID	Descriptio	on	U-value* SHGC*		,	SHGC lower limit	SHGC	upper limit	
No Data Availa	able								
Custom roof w	vindows*								
Window ID	Window		Maximum	SHGC	*	Substitution		-	
	Descriptio	on	U-value*	01100		SHGC lower limit	SHGC	upper limit	
No Data Availa	able								
Roof wind	<b>dow</b> * <i>sch</i> Window ID	<i>edule</i> Window no.	Opening %	Height [mm]	Width [mm]	Orientation	Outdoor shade	Indoor shade	
No Data Availa	able								
Skylight*		<i>performan</i> ylight descrip		s	ikylight :	shaft reflectance			
Skylight ID	UK OK								
Skylight*		-		S	skylight	shaft reflectance			

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

## External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

## External wall type

Wall	Wall	Solar	Wall shade	Bulk insulation	Reflective
ID	type	absorptance	[colour]	[R-value]	wall wrap*
EW-1	Cavity Brick	0		Bulk Insulation R1.1	No



## External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Kitchen/Living	EW-1	2700	2900	NW	7300	No
Kitchen/Living	EW-1	2700	7900	SE	700	Yes
Kitchen/Living	EW-1	2700	3800	SW	1300	No
Bedroom 1	EW-1	2700	2900	SE	8300	No
Bedroom 1	EW-1	2700	3500	SW	1300	No
Bedroom 1	EW-1	2700	1600	NW	0	No
Bedroom 2	EW-1	2700	3790	SW	4200	No

## Internal wall type

Wall ID	Wall type	Area [m <sup>2</sup> ]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	42.66	No insulation
IW-002	Cavity brick	30.24	No Insulation
IW-003	Concrete Panel/Blocks filled, plasterboard	7.56	No Insulation

## Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	28.55	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab, Unit Below 200mm	11.11	None	No Insulation	Ceramic Tiles 8mm
Bath/Idy	Concrete Slab, Unit Below 200mm	7.49	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	14.48	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Concrete Slab, Unit Below 200mm	11.74	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]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Entry	Plasterboard on Timber	Bulk Insulation R2.5	
Bath/Idy	Plasterboard on Timber	Bulk Insulation R2.5	

0008751422-01 Na	tHERS Certificate 6.8 Star Ra	ating as of 23 Oct 2023	HOUSE
Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Bedroom 1	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 2	Plasterboard on Timber	Bulk Insulation R2.5	

## **Ceiling** penetrations\*

Location	Quantity	Туре	Diameter [mm]	Sealed/unsealed
Kitchen/Living	0	Exhaust Fans	150	Unsealed
Bath/Idy	0	Exhaust Fans	150	Unsealed

## **Ceiling** fans

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

## Roof type

Construction	Added insulation [R-value]	Solar absorpta	nce Roof shade[colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	50	Medium

## Thermal bridging schedule for steel frame elements

Building element Steel section dimension [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	ype Location Fuel typ		Minimum efficiency/ performance	Recommended capacity
No Data Available				

Appliance/ system type	Lo	cation Fi	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							

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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#### 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 NatHERS assessment. Note, this may not be consistent with floor area in the design documents.           Celling penetrations         Excludes fixtures attached to the celling, including downlights, yents, exhaust fans, range hoods, chimneys and fit Excludes fixtures attached to the celling with small holes through the celling for wiring, e.g. celling fans; pendant lights, an heating and cooling ducts.           COP         Coefficient of performance           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rat Scheme) taling.           Default windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rat Scheme) taling.           EER         The is your homes rating without solar or batteries.           Errorgy value         The is your homes rating without solar or batteries.           Entrance door         types infit wentilitate her of the modelling software and must not be modelled as a door when opening to a minima typosure category – open           Exposure         seategory – protected           Exposure category – open         seatered bestructions at a similar height e.g. above 3 floors).           Exposure category – open         seatered obstructions ore yanasteriad with flow wellscatterefor bostructions bed	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 floor area in the design documents.           Celling penetrations         features that require a penetration to the celling, including downights, vents, exhaust fans, range hoods, chinneys and flue Excludes fixtures attached to the celling, including downights, vents, exhaust fans, range hoods, chinneys and flue Strong the celling for winning, e.g. celling fans; pendant lights, an conditioned           COP         Coefficient of performance         Coefficient of performance         Coefficient of performance           Custom windows         windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rat Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistic methods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricit 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).           Exposure category – exposed         terrain with no obstructions e a similar height e.g. arosslands with few well scattered obstructions below 10m, farmiland vacattered sheeds, lightly ventilated controls, elevated building software and must not be modelled as a door when opening to a minima vehilated control in a Cass 2 building.           Exposure category – pro		M. A A A A A A A A A A A A A A A A A A A
Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In so 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 Rat Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistic methods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricit input           Energy use         The sit 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 expoure category – exposed           terrain with ne obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – open         terrain with new 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 lew of time e.g. aburban housing, heavily vegetated bush land reas.           Review category – protected         terrain with numerous, closely spaced obstructions over 10 m e.g. suburban housing, heavily		the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the
COP         Coefficient of performance           Conditioned         a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In so 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 Rat Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistic. The provision standard occupancy assumptions. In so control windows that are representative of a specific type of window product and whose properties have been derived by statistic.           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 tened os the a specific torreliation benefits in the modelling software and must not be modelled as a door when opening to a minima exposure category – exposed           Exposure         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 – open         terrain with numerous, closely spaced obstructions below 10m e.g. auburban housing, heavily regetated bushland areas.           Motizontal shading feature         provides shading to the building in the horizontal plane, e.g. aexes, verandahs, pergolas, carports, or overhangs or	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 NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rat Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistic methods.           EER         Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single KWh of electricit input           Energy value         The nel cost to society including, but not limited to costs to the building user, the environment and energy networks (as defined in the ABB 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 minima ventilated corridor in a class 2 building.           Exposure category – exposed         terrain with no obstructions se.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions selow 10 m. g., suburban housing, heavily vegetated bush blocks, elevated units (e.g. above 3 floors).           Exposure category – protected         terrain with numerous, closely spaced obstructions are u.g. suburban tousing heavily and industrial areas.           Exposure category – suburban         terrain with numerous, closely spaced obstructions are u.g. eaves, verandahs, pergolas, carports, or overhangs or balcor from upper level6.           NotCC Cla	COP	
Custom         Scheme) rating.         Scheme) rating.           Default windows         windows that are representative of a specific type of window product and whose properties have been derived by statistic methods.           EER         Energy Leficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricit 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         exexposure category – exposed           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 numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban torizant is hading feature         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – suburban torizant lonstruction Code         the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCCC (lass 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'.           Openin	Conditioned	
Default windows         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 minima ventilated corridor in a Class 2 building.           Exposure         see exposure categoris 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 – open         terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.           Exposure category – protected         terrain with numerous, closely spaced obstructions below 10m e.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 balcor (NCC) Class 1, Z 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 openabil	Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
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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         The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as ventilated corridor in a Class 2 building.           Exposure         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 – open         terrain with no obstructions a a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland v cattered sheeds, 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 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 and use, and assigns a classification code. NatHERS software models 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           Provisional value         a home that achieves a net zero energy value*.         Copening percentage         the openablifty percentage or opera	EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
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Exposure         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 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. ciby and industrial areas.           Provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balcor 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 (lass)           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 documente a provisional value of medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical N and can be found at www.nathers.gov.au           Recommended capacity	Energy value	
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Exposure category – protectedscattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).Exposure category – protectedterrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.Horizontal shading featureprovides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balcor from upper levels.National Construction Code (NCC) Classthe 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 homea home that achieves a net zero energy value*.Opening percentagethe openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.Provisional valuean ome that achieves of equipment that is recommended by NatHERS to achieve the desired comfort conditions in th zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualifie 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 windowfor NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an space, and generally does not have a diffuser.Shading featuresincludes 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	Exposure category – exposed	
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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 documenta a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical N 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 th zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualifie 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 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 releaseed inward. SHGC is express	-	from upper levels.
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Provisional value       a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical N 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 th zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualifie 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 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 (succ)       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	Opening percentage	
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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 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	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.
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		
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	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 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	0	
subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less	Skylight (also known as roof lights)	
neat it transmits.	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.
bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER)	STCs	
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 inclu but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks su as polystyrene insulation sheeting or plastic strips	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.	J-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b> a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.	Inconditioned	
Vertical shading features provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Inclu privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage tree)	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)	Nindow 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)