

Nationwide House Energy Rating Scheme®

Class 2 Summary

NatHERS® Certificate No. 0009291100

Generated on 11 Mar 2024 using BERS Pro v5.1.5 (3.22)

Property

Address 16 Lowana Street,
VILLAWOOD , NSW , 2163

Lot/DP Lot 634 DP 36612

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=SVphMIhTI. 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 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



NCC heating and cooling maximum loads (MJ/m²/p.a.)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled block average	19.9	4.6
Maximum block limit	N/A	N/A

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 ² /p.a.]	Cooling load (load limit) [MJ/m ² /p.a.]	Total load [MJ/m ² /p.a.]	Star Rating	Whole of Home Rating
0009291097	1	19.9 (N/A)	2.2 (N/A)	22.1	7.9	0
0009291071	2	21.4 (N/A)	2.3 (N/A)	23.7	7.7	0

Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m ² /p.a.]	Cooling load (load limit) [MJ/m ² /p.a.]	Total load [MJ/m ² /p.a.]	Star Rating	Whole of Home Rating
0009291089	3	18.7 (N/A)	7.1 (N/A)	25.7	7.4	0
0009291063	4	19.5 (N/A)	6.6 (N/A)	26.1	7.4	0

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.

Disclaimer

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

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

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Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0009291097

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Property

Address Unit 1, 16 Lowana Street,
VILLAWOOD, NSW, 2163

Lot/DP Lot 634 DP 36612

NCC class* 2

Floor/all Floors G of 1 floors

Type New Home

Plans

Main plan P22121

Prepared by DKT Studio

Construction and environment

Assessed floor area [m2]*	Exposure type
Conditioned* 64.8	Suburban
Unconditioned* 9.0	NatHERS climate zone
Total 73.8	56 Mascot (Sydney Airport)
Garage 0.0	



Accredited assessor

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Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

NCC Requirements

NCC provisions Volume One

Strate/Territory variation Yes

National Construction Code (NCC) requirements

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Thermal performance Star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.9	2.2
Load limits	N/A	N/A

Features determining load limits

Floor Type (lowest conditioned area)	N/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?](http://hstar.com.au/QR/Generate?p=GpJisncQs)
p=GpJisncQs.
When using either link,
ensure you are visiting
hstar.com.au



About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting Options:

Floor Type:

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

NCC Climate Zone 1 or 2:

Yes
No
NA – Not Applicable

Outdoor Living Area:

Yes
No
NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes
No
NA – Not Applicable



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Energy use

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate

Certificate check

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

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		Occupancy/Other
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

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 as 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 ²]
Kitchen/Living	Kitchen/Living	32.04
Entry	Daytime	8.89
Bath/Ldry	Unconditioned	9.01
Bedroom 1	Bedroom	12.4
Bedroom 2	Bedroom	11.43
Glazed Common Area	Glazed Common Area	16.25

Window and glazed door type and performance

Default windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				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-004-01 A	W3	2400	3010	Awning	60	NE	No
Kitchen/Living	ALM-003-01 A	W2	850	2410	Awning	45	NW	No
Bath/Ldry	ALM-003-01 A	W9	1200	730	Awning	90	SW	No
Bedroom 1	ALM-004-01 A	W10	2400	2050	Awning	45	SW	No
Bedroom 2	ALM-003-01 A	W1	850	1860	Awning	90	NW	No
Bedroom 2	ALM-004-01 A	W11	1200	750	Awning	00	NW	No
Glazed Common Area	ALM-001-01 A	W4	2400	970	Awning	90	NE	No
Glazed Common Area	ALM-002-01 A	W5	2400	590	Awning	00	NE	No
Glazed Common Area	ALM-001-01 A	W6	2400	1050	Awning	90	SW	No



Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Glazed Common Area	ALM-002-01 A	W7	2400	490	Awning	00	SW	No
Glazed Common Area	ALM-002-01 A	W8	2400	1270	Awning	00	SW	No

Roof window* type and performance value

Default roof windows*

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

Custom roof windows*

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

Roof window* schedule

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 ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective 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	6800	NE	2700	Yes
Kitchen/Living	EW-1	2700	2200	SE	3100	No
Kitchen/Living	EW-1	2700	4045	NW	400	Yes
Entry	EW-1	2700	145	SE	3100	No
Bath/Ldry	EW-1	2700	2895	SE	3100	No
Bath/Ldry	EW-1	2700	3245	SW	100	No
Bedroom 1	EW-1	2700	3445	SW	1400	No
Bedroom 1	EW-1	2700	4145	NW	100	No
Bedroom 2	EW-1	2700	3190	NW	400	Yes
Glazed Common Area	EW-1	2700	2945	NE	1750	Yes
Glazed Common Area	EW-1	2700	2945	SW	4650	Yes

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
IW-001	TimberStud Frame, Brick Veneer	0.00	No insulation
IW-002	Single Skin Brick	66.96	No insulation
IW-003	Cavity brick	0.00	No Insulation

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	32.04	None	No Insulation	Vinyl 3mm
Entry	Concrete Slab on Ground 100mm	8.89	None	No Insulation	Vinyl 3mm
Bath/Ldry	Concrete Slab on Ground 100mm	9.01	None	No Insulation	Ceramic Tiles 8mm



Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bedroom 1	Concrete Slab on Ground 100mm	12.40	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Concrete Slab on Ground 100mm	11.43	None	No Insulation	Carpet+Rubber Underlay 18mm
Glazed Common Area	Concrete Slab on Ground 100mm	16.25	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	
Entry	Concrete, Plasterboard with Timber Frame	No insulation	
Bath/Ldry	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	
Glazed Common Area	Concrete, Plasterboard with Timber Frame	No insulation	

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
Kitchen/Living	14	Downlights - LED	150	Sealed
Kitchen/Living	14	Exhaust Fans	150	Sealed
Entry	3	Downlights - LED	150	Sealed
Bath/Ldry	3	Downlights - LED	150	Sealed
Bath/Ldry	3	Exhaust Fans	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

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/m² is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

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

Heating system

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

Hot water system

Appliance/ system type	Fuel type	Hot Water	Minimum efficiency /STC	Zone 3 STC	Zone 3 Substitution tolerance ranges		Assessed daily load [litres]
		CER Zone			lower limit	upper limit	
No Data Available							

Pool/spa equipment

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



Onsite Renewable Energy Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



Explanatory notes

About this report

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

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the home's 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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Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's 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 operability 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 sheathing 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)

* Refer to glossary.

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0009291071

Generated on 11 Mar 2024 using BERS Pro v5.1.5 (3.22)

Property

Address Unit 2, 16 Lowana Street,
VILLAWOOD, NSW, 2163

Lot/DP Lot 634 DP 36612

NCC class* 2

Floor/all Floors G of 1 floors

Type New Home

Plans

Main plan P22121

Prepared by DKT Studio

Construction and environment

Assessed floor area [m2]*	Exposure type
Conditioned* 81.2	Suburban
Unconditioned* 12.8	NatHERS climate zone
Total 94.0	56 Mascot (Sydney Airport)
Garage 0.0	



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 Volume One

State/Territory variation Yes

National Construction Code (NCC) requirements

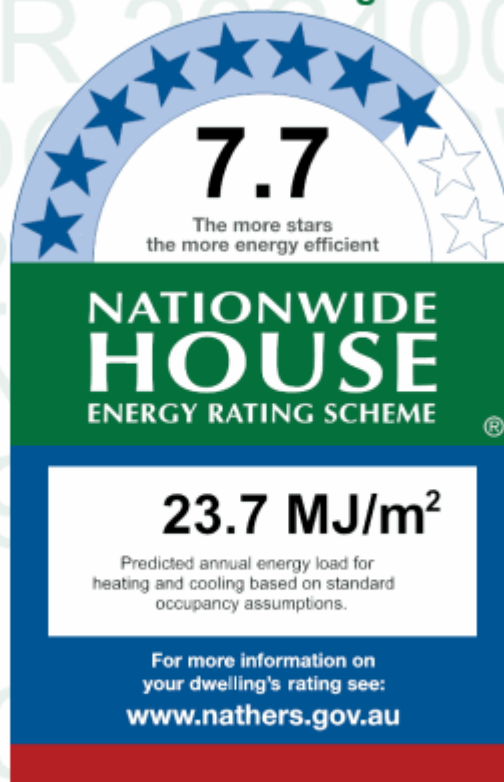
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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

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

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

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

Thermal performance Star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.4	2.3
Load limits	N/A	N/A

Features determining load limits

Floor Type (lowest conditioned area)	N/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?](http://hstar.com.au/QR/Generate?p=ZbySTXImY)
p=ZbySTXImY.
When using either link,
ensure you are visiting
hstar.com.au



About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting Options:

Floor Type:

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

NCC Climate Zone 1 or 2:

Yes
No
NA – Not Applicable

Outdoor Living Area:

Yes
No
NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes
No
NA – Not Applicable



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Energy use

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate



Certificate check

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

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		Occupancy/Other
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

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 as 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 ²]
Kitchen/Living	Kitchen/Living	35.66
Entry	Daytime	11.16
Bath	Unconditioned	7.22
Bedroom 2	Bedroom	11.9
Bedroom 3	Bedroom	10.53
Glazed Common Area	Glazed Common Area	17.15
WC/Ldry	Unconditioned	5.6
Bedroom 1	Bedroom	11.98

Window and glazed door type and performance

Default windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				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-004-01 A	W3	2400	2890	Awning	60	NE	No
Kitchen/Living	ALM-003-01 A	W25	1380	2050	Awning	45	SE	No
Kitchen/Living	ALM-003-01 A	W24	860	1210	Awning	90	NW	No
Bath	ALM-003-01 A	W26	600	1450	Awning	60	SE	No
Bedroom 2	ALM-004-01 A	W22	2400	2050	Awning	45	SW	No
Bedroom 3	ALM-003-01 A	W14	2050	1210	Awning	60	SW	No
Glazed Common Area	ALM-001-01 A	W4	2400	970	Awning	90	NE	No



Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Glazed Common Area	ALM-002-01 A	W27	2400	590	Awning	00	NE	No
Glazed Common Area	ALM-002-01 A	W15	2400	1270	Awning	00	SW	No
Glazed Common Area	ALM-001-01 A	W28	2400	1050	Awning	90	SW	No
Glazed Common Area	ALM-002-01 A	W29	2400	490	Awning	00	SW	No
WC/Ldry	ALM-003-01 A	W16	600	490	Awning	10	NW	No
Bedroom 1	ALM-003-01 A	W23	2050	1690	Awning	10	NE	No

Roof window* type and performance value

Default roof windows*

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

Custom roof windows*

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

Roof window* schedule

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 ²]	Orientation	Outdoor shade	Diffuser
No Data Available							



External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective 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	4500	NE	2575	Yes
Kitchen/Living	EW-1	2700	5800	SE	150	Yes
Kitchen/Living	EW-1	2700	5000	NW	100	No
Bath	EW-1	2700	1890	SE	100	No
Bedroom 2	EW-1	2700	800	NE	100	No
Bedroom 2	EW-1	2700	3400	SE	100	No
Bedroom 2	EW-1	2700	4045	SW	1825	No
Bedroom 3	EW-1	2700	3845	SW	400	Yes
Bedroom 3	EW-1	2700	3045	NW	3100	No
Glazed Common Area	EW-1	2700	2945	NE	1550	Yes
Glazed Common Area	EW-1	2700	2945	SW	3900	Yes
WC/Ldry	EW-1	2700	645	NW	3100	No
Bedroom 1	EW-1	2700	3395	NE	100	No
Bedroom 1	EW-1	2700	4200	SE	150	No
Bedroom 1	EW-1	2700	750	SW	100	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
IW-001	Single Skin Brick	97.47	No insulation
IW-002	Cavity brick	0.00	No Insulation

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	35.66	None	No Insulation	Vinyl 3mm
Entry	Concrete Slab on Ground 100mm	11.16	None	No Insulation	Vinyl 3mm
Bath	Concrete Slab on Ground 100mm	7.22	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 100mm	11.90	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3	Concrete Slab on Ground 100mm	10.53	None	No Insulation	Carpet+Rubber Underlay 18mm
Glazed Common Area	Concrete Slab on Ground 100mm	17.15	None	No Insulation	Cork Tiles or Parquetry 8mm
WC/Ldry	Concrete Slab on Ground 100mm	5.60	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 100mm	11.98	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	Concrete, Plasterboard with Timber Frame	No insulation	
Entry	Concrete, Plasterboard with Timber Frame	No insulation	
Bath	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 2	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 3	Concrete, Plasterboard with Timber Frame	No insulation	
Glazed Common Area	Concrete, Plasterboard with Timber Frame	No insulation	
WC/Ldry	Concrete, Plasterboard with Timber Frame	No insulation	
Bedroom 1	Concrete, Plasterboard with Timber Frame	No insulation	

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
Kitchen/Living	15	Downlights - LED	150	Sealed
Kitchen/Living	15	Exhaust Fans	150	Sealed
Entry	4	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	2	Exhaust Fans	150	Sealed



Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
Bedroom 2	5	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
WC/Ldry	2	Downlights - LED	150	Sealed
WC/Ldry	2	Exhaust Fans	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 2	1	900
Bedroom 3	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/m² is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

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



Heating system

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

Hot water system

Appliance/ system type	Fuel type	Hot Water CER Zone	Minimum efficiency /STC	Zone 3 STC	Zone 3 Substitution tolerance ranges		Assessed daily load [litres]
					lower limit	upper limit	
No Data Available							

Pool/spa equipment

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

Onsite Renewable Energy Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



Explanatory notes

About this report

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

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

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

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

Non-accredited assessors (Raters) have no ongoing training requirements and

are not quality assured.

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

Disclaimer

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

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's 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 sheathing 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)

* Refer to glossary.

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0009291089

Generated on 11 Mar 2024 using BERS Pro v5.1.5 (3.22)

Property

Address Unit 3, 16 Lowana Street,
VILLAWOOD, NSW, 2163

Lot/DP Lot 634 DP 36612

NCC class* 2

Floor/all Floors G of 1 floors

Type New Home

Plans

Main plan P22121

Prepared by DKT Studio

Construction and environment

Assessed floor area [m2]*	Exposure type
Conditioned* 66.4	Suburban
Unconditioned* 8.1	NatHERS climate zone
Total 74.5	56 Mascot (Sydney Airport)
Garage 0.0	



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 Volume One

Strate/Territory variation Yes

National Construction Code (NCC) requirements

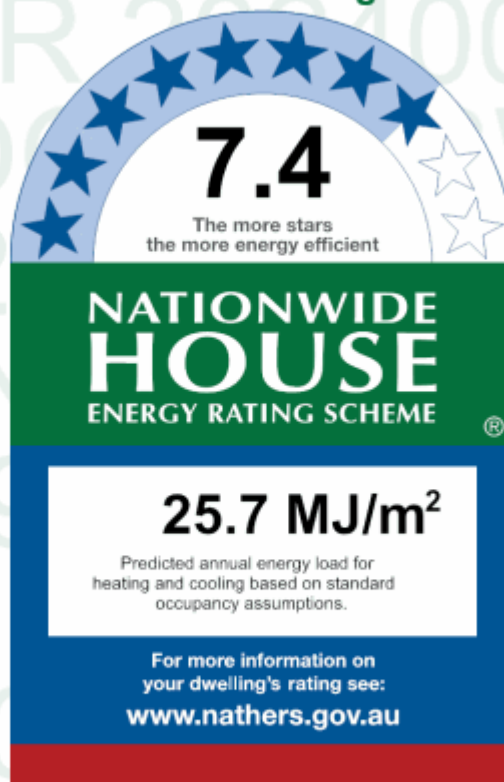
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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

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

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

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

Thermal performance Star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.7	7.1
Load limits	N/A	N/A

Features determining load limits

Floor Type (lowest conditioned area)	N/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?](http://hstar.com.au/QR/Generate?p=ARPPfnhRr)
[p=ARPPfnhRr](http://hstar.com.au/QR/Generate?p=ARPPfnhRr).
When using either link,
ensure you are visiting
hstar.com.au



About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting Options:

Floor Type:

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

NCC Climate Zone 1 or 2:

Yes
No
NA – Not Applicable

Outdoor Living Area:

Yes
No
NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes
No
NA – Not Applicable



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Energy use

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate

Certificate check

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

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	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?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

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 as 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 ²]
Kitchen/Living	Kitchen/Living	33.92
Entry	Daytime	7.65
Bath/Ldry	Unconditioned	8.06
Bedroom 1	Bedroom	13.02
Bedroom 2	Bedroom	11.84
Glazed Common Area	Glazed Common Area	22

Window and glazed door type and performance

Default windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				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-004-01 A	W3	2400	3010	Awning	60	NE	No
Kitchen/Living	ALM-003-01 A	W2	850	2410	Awning	10	NW	No
Bath/Ldry	ALM-003-01 A	W9	1200	730	Awning	10	SW	No
Bedroom 1	ALM-004-01 A	W10	2400	2050	Awning	45	SW	No
Bedroom 2	ALM-003-01 A	W1	850	1810	Awning	10	NW	No
Bedroom 2	ALM-004-01 A	W11	1200	750	Awning	00	NW	No
Glazed Common Area	ALM-001-01 A	W4	2220	2700	Awning	10	NE	No
Glazed Common Area	ALM-001-01 A	W6	2050	2700	Awning	10	SW	No



Roof window* type and performance value

Default roof windows*

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

Custom roof windows*

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

Roof window* schedule

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 ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective 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	6800	NE	2700	Yes
Kitchen/Living	EW-1	2700	600	SE	300	No
Kitchen/Living	EW-1	2700	4100	NW	400	Yes
Entry	EW-1	2700	200	SE	3075	No
Bath/Ldry	EW-1	2700	2800	SE	3050	No
Bath/Ldry	EW-1	2700	3300	SW	100	Yes
Bedroom 1	EW-1	2700	3500	SW	1400	Yes
Bedroom 1	EW-1	2700	4200	NW	100	No
Bedroom 2	EW-1	2700	3300	NW	400	Yes
Glazed Common Area	EW-1	2700	2945	NE	250	Yes
Glazed Common Area	EW-1	2700	2945	SW	4600	Yes

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
IW-001	TimberStud Frame, Brick Veneer	0.00	No insulation
IW-002	Timber Stud Frame, Direct Fix Plasterboard	68.85	No insulation
IW-003	Cavity brick	0.00	No Insulation

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	33.92	None	No Insulation	Vinyl 3mm
Entry	Concrete Slab, Unit Below 200mm	7.65	None	No Insulation	Vinyl 3mm
Bath/Ldry	Concrete Slab, Unit Below 200mm	8.06	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	13.02	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2	Concrete Slab, Unit Below 200mm	11.84	None	No Insulation	Carpet+Rubber Underlay 18mm
Glazed Common Area	Concrete Slab, Unit Below 200mm	22.00	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	
Entry	Plasterboard on Timber	Bulk Insulation R2.5	
Bath/Ldry	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	
Glazed Common Area	Plasterboard on Timber	Bulk Insulation R2.5	

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
Kitchen/Living	14	Downlights - LED	150	Sealed
Kitchen/Living	14	Exhaust Fans	150	Sealed
Entry	3	Downlights - LED	150	Sealed
Bath/Ldry	3	Downlights - LED	150	Sealed
Bath/Ldry	3	Exhaust Fans	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

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]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	30	Light

Thermal bridging schedule for steel frame elements

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



Appliance schedule

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

Note: A flat assumption of 5W/m² is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

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

Heating system

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

Hot water system

Appliance/ system type	Fuel type	Hot Water	Minimum efficiency /STC	Zone 3 STC	Zone 3 Substitution tolerance ranges		Assessed daily load [litres]
		CER Zone			lower limit	upper limit	
No Data Available							

Pool/spa equipment

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

Onsite Renewable Energy Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



Explanatory notes

About this report

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

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

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

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

Non-accredited assessors (Raters) have no ongoing training requirements and

are not quality assured.

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

Disclaimer

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

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's 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 operability 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 sheathing 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)

* Refer to glossary.

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0009291063

Generated on 11 Mar 2024 using BERS Pro v5.1.5 (3.22)

Property

Address Unit 4, 16 Lowana Street,
VILLAWOOD, NSW, 2163

Lot/DP Lot 634 DP 36612

NCC class* 2

Floor/all Floors G of 1 floors

Type New Home

Plans

Main plan P22121

Prepared by DKT Studio

Construction and environment

Assessed floor area [m2]*	Exposure type
Conditioned* 82.7	Suburban
Unconditioned* 11.1	NatHERS climate zone
Total 93.7	56 Mascot (Sydney Airport)
Garage 0.0	



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 Volume One

Strate/Territory variation Yes

National Construction Code (NCC) requirements

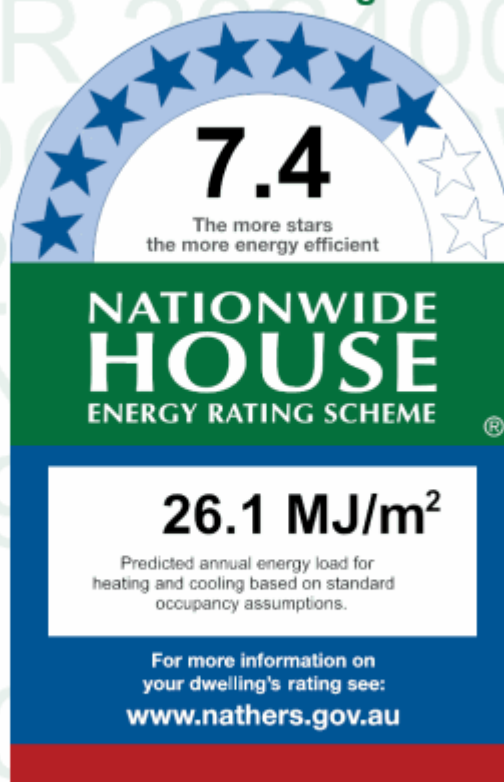
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Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance Star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	19.5	6.6
Load limits	N/A	N/A

Features determining load limits

Floor Type (lowest conditioned area)	N/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?](http://hstar.com.au/QR/Generate?p=cgzaDgErx)
p=cgzaDgErx.
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 *ABC 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

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate

Certificate check

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

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		Occupancy/Other
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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".	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

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 as 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 ²]
Kitchen/Living	Kitchen/Living	37.48
Entry	Daytime	10.64
Bath	Unconditioned	6.34
Bedroom 2	Bedroom	11.84
Bedroom 3	Bedroom	10.57
Glazed Common Area	Glazed Common Area	21.48
WC/Ldry	Unconditioned	4.71
Bedroom 1	Bedroom	12.14

Window and glazed door type and performance

Default windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				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-004-01 A	W3	2400	2890	Awning	60	NE	No
Kitchen/Living	ALM-003-01 A	W25	850	2050	Awning	10	SE	No
Kitchen/Living	ALM-003-01 A	W24	860	1210	Awning	10	NW	No
Bath	ALM-003-01 A	W26	600	1450	Awning	10	SE	No
Bedroom 2	ALM-004-01 A	W22	2400	2050	Awning	45	SW	No
Bedroom 3	ALM-003-01 A	W14	2050	1210	Awning	10	SW	No
Glazed Common Area	ALM-001-01 A	W4	2220	2700	Awning	10	NE	No



Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Glazed Common Area	ALM-001-01 A	W15	2050	2700	Awning	10	SW	No
WC/Ldry	ALM-003-01 A	W16	600	490	Awning	10	NW	No
Bedroom 1	ALM-003-01 A	W23	2050	1690	Awning	10	NE	No

Roof window* type and performance value

Default roof windows*

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

Custom roof windows*

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

Roof window* schedule

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 ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

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



External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective 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	4500	NE	2650	Yes
Kitchen/Living	EW-1	2700	5800	SE	300	Yes
Kitchen/Living	EW-1	2700	3450	NW	100	No
Bath	EW-1	2700	2000	SE	900	No
Bedroom 2	EW-1	2700	700	NE	6400	No
Bedroom 2	EW-1	2700	3350	SE	200	No
Bedroom 2	EW-1	2700	4000	SW	1875	Yes
Bedroom 3	EW-1	2700	3900	SW	450	Yes
Bedroom 3	EW-1	2700	3050	NW	150	No
Glazed Common Area	EW-1	2700	2945	NE	200	Yes
Glazed Common Area	EW-1	2700	2945	SW	200	Yes
WC/Ldry	EW-1	2700	700	NW	200	No
Bedroom 1	EW-1	2700	3400	NE	250	No
Bedroom 1	EW-1	2700	4150	SE	200	No
Bedroom 1	EW-1	2700	700	SW	5500	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
IW-001	Timber Stud Frame, Direct Fix Plasterboard	101.39	No insulation
IW-002	Cavity brick	0.00	No Insulation

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	37.48	None	No Insulation	Vinyl 3mm



Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Entry	Concrete Slab, Unit Below 200mm	10.64	None	No Insulation	Vinyl 3mm
Bath	Concrete Slab, Unit Below 200mm	6.34	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 200mm	11.84	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3	Concrete Slab, Unit Below 200mm	10.57	None	No Insulation	Carpet+Rubber Underlay 18mm
Glazed Common Area	Concrete Slab, Unit Below 200mm	21.48	None	No Insulation	Ceramic Tiles 8mm
WC/Ldry	Concrete Slab, Unit Below 200mm	4.71	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab, Unit Below 200mm	12.14	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap* [yes/no]
Kitchen/Living	Plasterboard on Timber	Bulk Insulation R2.5	
Entry	Plasterboard on Timber	Bulk Insulation R2.5	
Bath	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 2	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 3	Plasterboard on Timber	Bulk Insulation R2.5	
Glazed Common Area	Plasterboard on Timber	Bulk Insulation R2.5	
WC/Ldry	Plasterboard on Timber	Bulk Insulation R2.5	
Bedroom 1	Plasterboard on Timber	Bulk Insulation R2.5	

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
Kitchen/Living	15	Downlights - LED	150	Sealed
Kitchen/Living	15	Exhaust Fans	150	Sealed
Entry	4	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	2	Exhaust Fans	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
WC/Ldry	2	Downlights - LED	150	Sealed

* Refer to glossary.



Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
WC/Ldry	2	Exhaust Fans	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
Kitchen/Living	1	900
Bedroom 2	1	900
Bedroom 3	1	900
Bedroom 1	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	30	Light
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, Anti-glare Up R1.3	30	Light

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

Note: A flat assumption of 5W/m² is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

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

Heating system

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



Hot water system

Appliance/ system type	Fuel type	Hot Water	Minimum efficiency	Zone 3 STC	Zone 3 Substitution tolerance ranges		Assessed daily load [litres]
		CER Zone	/STC		lower limit	upper limit	
No Data Available							

Pool/spa equipment

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

Onsite Renewable Energy Schedule

System Type	Orientation	System Size Or Generation Capacity
No Data Available		

Battery Schedule

System Type	Size [Battery Storage Capacity]
No Data Available	



Explanatory notes

About this report

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

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

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

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

Non-accredited assessors (Raters) have no ongoing training requirements and

are not quality assured.

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

Disclaimer

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

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
COP	Coefficient of performance
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's 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 operability 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 sheathing 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)

* Refer to glossary.