Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. C38S8J0WB4-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 1, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]* Conditioned* 66.7 Unconditioned* 7.2 Total 73.9 Garage - Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	anisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions Volume 1 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

8.8 The more stars the more energy efficient

HOUSE ENERGY RATING SCHEME

(R)

26.5 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.1	2.4
Load limits	N/A	N/A
Fasture data		1

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=C38S8J0WB4-03 When using either link, ensure you are visiting www.fr5.com.au.



About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:





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



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

Shading to existing fence line and house modelled as per NatHERS technical Notes

- 1 Slab on ground with suspended slab above
- 2a External & Party Walls to be Double brick cavity with cavity board insulation
- 2b Internal Walls to be Single Skin brick wall with plasterboard or render finish
- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a

5 - Rooflights / Skylights:- N/a *Refer to glossary.

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~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

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Room schedule

Room	Zone Type	Area [m²]
BED 2	bedroom	11.2
KITCHEN/LIVING	kitchen	39.4
BATH	unconditioned	7.2
BED 1	bedroom	16.1

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 2	ALM-002-01 A	W07	1400	1690	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	W06	1400	1690	sliding	45.0	NW	No
KITCHEN/LIVING	ALM-002-01 A	-SIDELITE	2400	590	fixed	0.0	SW	No
BED 1	ALM-001-01 A	W03	1400	730	awning	90.0	SW	No
BED 1	ALM-002-01 A	W04	1400	1690	sliding	45.0	SW	No

Roof window* type and performance value

Default* roof windows

				Substitution to	erance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					
				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit



No Data Available

Roof window* schedule

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

Skylight* type and performance

No Data Available	Skylight ID	Skylight description	Skylight shaft reflectance
	No Data Available		

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1100	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

		Height	Width		Horizontal shading feature* maximum	Vertical shading
Location	Wall ID	[mm]	[mm]	Orientation		feature* (yes/no)
BED 2	1	2700	581	NW	0	Yes
BED 2	1	2701	1803	SE	0	No
BED 2	1	2700	1243	SE	0	Yes
BED 2	1	2700	3847	NE	1847	Yes
KITCHEN/LIVING	1	2700	3928	NE	2427	Yes
KITCHEN/LIVING	1	2700	7927	NW	0	Yes
KITCHEN/LIVING	1	2700	2966	SW	2427	Yes
KITCHEN/LIVING	1	2700	1735	SE	0	No
BATH	1	2700	2334	SE	0	No
BED 1	1	2701	1501	SE	0	Yes
BED 1	1	2700	1839	SE	0	No
BED 1	1	2700	2390	NW	3160	Yes
BED 1	1	2700	4816	SW	0	No



Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Single Brick Finished	46.3	

Floor type

			Sub-floor	Added insulat	tion
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
BED 2	FR5 - CSOG: Slab on Ground	11.2	Enclosed	R0.0	Carpet
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	39.4	Enclosed	R0.0	Tiles
BATH	FR5 - CSOG: Slab on Ground	7.2	Enclosed	R0.0	Tiles
BED 1	FR5 - CSOG: Slab on Ground	16.1	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction	Bulk insulation R-value	Reflective
	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
BED 2	2	Downlights	50	50	Sealed
KITCHEN/LIVING	10	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
BED 1	2	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
KITCHEN/LIVING	1	1200
BED 1	1	1200

Roof type

	Added insulation				
Construction	[R-value]	Solar absorptance	Roof shade [colour]		
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium		
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium		

Thermal bridging schedule for steel frame elements

C38S8J0WB4-03 NatHERS Certificate			8.8 Star Rating as of 19 Feb 2024		
Building element	Steel section dimension [height x width, mm]	s Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]	
No Data Available					
Appliance sch					
· · · ·	Ihole of Home performance a on of 5W/m2 is used for lighting			,	

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

Heating system

			Minimum efficiency/	Recommended	
Appliance/ system type	Location	Fuel type	performance	capacity	
No Whole of Home perform	ance assessment co	nducted for this certifica	te.		

Hot water system

			Substitution to	Substitution tolerance ranges		
Appliance/ system type	Fuel type	Minimum efficiency/ performance	Zone 3 STC lower limit	Zone 3 STC upper limit	Assessed daily load	
No Whole of Home perform	ance assessment co	nducted for this certificate				

Pool/spa equipment

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

Onsite renewable energy schedule

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

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

Battery schedule

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

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



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

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

Glossary

Ciccoury	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with
	scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	terrain with numerous, please wanted abstructions over 10 m e.g. eity and industrial erges
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
Skylight (also known as roof lights)	f or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.

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8.8 Star Rating as of 19 Feb 2024



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 Regulatory
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, continuous thermal breaks such as polystyrene
	insulation sheeting, plastic strips or furring channels.
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features*
	(eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. 0ES2MILRD8-03

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Property

Address

Lot/DP NCC Class* Floor/all Floors Type 2, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY AS

KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*50.2Unconditioned*7.9Total58.1Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia			
Business name	eCerts			
Email	info@ecerts.com.au			
Phone	1300323787			
Accreditation No.	HERA10205			
Assessor Accrediting Orga	anisation			
HERA				
Declaration of interest	No			

NCC Requirements

NCC provisions State/Territory variation

Volume 1 Yes

National Construction Code (NCC) requirements

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

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

Thermal performance star rating



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

35.9 MJ/m²

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

> For more information on your dwelling's rating see: WWW.Nathers.gov.au

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	34.8	1.1
Load limits	N/A	N/A

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=0ES2MILRD8-03 When using either link, ensure you are visiting www.fr5.com.au.



*Refer to glossary. Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 2, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

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Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

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Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



conducted for this

certificate.



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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging		-			
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	,				
Has the insulation been installed according to the NCC requirements?					
Building sealing	1	1	1		
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessmen	t is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

Shading to existing fence line and house modelled as per NatHERS technical Notes

- 1 Slab on ground with suspended slab above
- 2a External & Party Walls to be Double brick cavity with cavity board insulation
- 2b Internal Walls to be Single Skin brick wall with plasterboard or render finish
- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a

5 - Rooflights / Skylights:- N/a *Refer to glossary.

0ES2MILRD8-03 NatHERS Certificate



~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

Room	Zone Type	Area [m ²]
BED 1	bedroom	14.6
BATH	unconditioned	7.9
KITCHEN/LIVING	kitchen	35.6

Window and glazed door type and performance

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	W02	1400	1690	sliding	45.0	W	No
BATH	ALM-001-01 A	W08	600	680	awning	90.0	E	No
KITCHEN/LIVING	ALM-002-01 A	W01	1230	1690	sliding	45.0	W	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	E	No

Roof window* type and performance value

Default* roof windows

			Substitution tolerance ranges		
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					
				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

0ES2MILRD8-03 NatHERS Certificate

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-



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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		
Claulia htt achodula		

Skylight* schedule

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

. **.**

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1000	100.0	W

External wall type

Wall ID	Wall type	Solar absorptance		Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2700	3512	W	0	No
BED 1	1	2700	2147	S	0	Yes
BED 1	1	2700	2260	Ν	0	No
BED 1	1	2701	1905	Ν	0	Yes
BATH	1	2700	2378	Ν	0	No
BATH	1	2700	1074	S	0	Yes
BATH	1	2700	3305	E	0	Yes
KITCHEN/LIVING	1	2700	2910	Ν	0	No
KITCHEN/LIVING	1	2700	3773	W	0	Yes
KITCHEN/LIVING	1	2700	6499	S	0	No
KITCHEN/LIVING	1	2700	4020	E	2549	Yes

Internal wall type

Wall ID	Wall type	Area [m ²] Bulk insulation
1	FR5 - Single Brick Finished	27.4

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Floor type

		5	Sub-floor	Added insulatio	n
Location	Construction	Area [m ²] \	ventilation	[R-value]	Covering
BED 1	FR5 - CSOG: Slab on Ground	14.6	Enclosed	R0.0	Carpet
BATH	FR5 - CSOG: Slab on Ground	7.9	Enclosed	R0.0	Tiles
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	35.6	Enclosed	R0.0	Tiles

Ceiling type

	Construction	Bulk insulation R-value	Reflective
Location	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

Width	
[mm]	Sealed/unsealed
50	Sealed
200	Sealed
50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

	Added insulation		
Construction	[R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

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

Cooling system

0ES2MILRD8-03 NatHERS Certificate			8.3 Star Rating a	s of 19 Feb 2024
			Minimum efficiency/	Recommended
Appliance/ system type	Location	Fuel type	performance	capacity
No Whole of Home performan	ce assessment conduct	ed for this certificate.		
Heating system				
			Minimum efficiency/	Recommended
Appliance/ system type	Location	Fuel type	performance	capacity
No Whole of Home performan	ce assessment conduct	ed for this certificate.		
Hot water system				
			Substitution tolerance ra	nges
		Minimum		
		efficiency/	Zone 3 STC Zone 3	STC Assessed daily
Appliance/ system type	Fuel type	performance	lower limit upper li	mit load
No Whole of Home performan	ce assessment conduct	ed for this certificate.		
Pool/spa equipment				
			Minimum efficiency/	Recommended
Appliance/ system type		Fuel type	performance	capacity
No Whole of Home performan	ce assessment conduct	ed for this certificate.		
Oneite renewable e	nerav schedule	1		
Unsite renewanie e				
			aducted for this certificate)	
			nducted for this certificate)	
Onsite renewable e (not applicable if a Whole of System type			nducted for this certificate) System size or genera	ation capacity

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



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

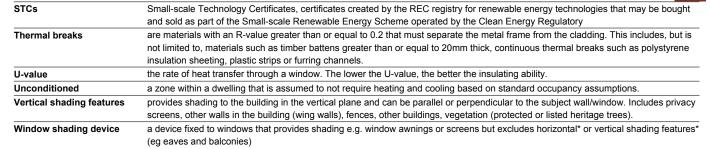
Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Glossary

Cloccaly	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions 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) Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

0ES2MILRD8-03 NatHERS

8.3 Star Rating as of 19 Feb 2024



Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. QEAZIBL2GU-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 3, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECT

10/02/2027

Construction and environmentAssessed floor area [m²]*Exposure tConditioned*50.2suburbanUnconditioned*7.9NatHERS cTotal58.128 RichmonGarage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions State/Territory variation

Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

35.1 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling	
Modelled	33.5	1.6	
Load limits	N/A	N/A	
Features determining load limits			

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=QEAZIBL2GU-03 When using either link, ensure you are visiting www.fr5.com.au.



QEAZIBL2GU-03 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



certificate.



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Does the dwelling meet the NCC requirements for Building Sealing?					
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- $2b-\mbox{Internal}$ Walls to be Single Skin brick wall with plasterboard or render finish
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- 4 Windows internal curtains:- N/a

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QEAZIBL2GU-03 NatHERS Certificate



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~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

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Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

				Substitution to	olerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Availa	ble				

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	W11	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W13	600	680	awning	90.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	W12	1230	1690	sliding	45.0	SW	No

Roof window* type and performance value

Default* roof windows

				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					
				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		
Claulia htt achodula		

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1000	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance		Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2701	1905	SE	0	Yes
BED 1	1	2700	2260	SE	0	No
BED 1	1	2700	2147	NW	0	Yes
BED 1	1	2700	3512	SW	0	No
BATH	1	2700	3305	NE	0	Yes
BATH	1	2700	1074	NW	0	Yes
BATH	1	2700	2378	SE	0	No
KITCHEN/LIVING	1	2700	4020	NE	2549	Yes
KITCHEN/LIVING	1	2700	6499	NW	0	No
KITCHEN/LIVING	1	2700	3773	SW	0	Yes
KITCHEN/LIVING	1	2700	2910	SE	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Single Brick Finished	27.4	

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Floor type

		5	Sub-floor	Added insulatio	n
Location	Construction	Area [m ²] \	ventilation	[R-value]	Covering
BED 1	FR5 - CSOG: Slab on Ground	14.6	Enclosed	R0.0	Carpet
BATH	FR5 - CSOG: Slab on Ground	7.9	Enclosed	R0.0	Tiles
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	35.6	Enclosed	R0.0	Tiles

Ceiling type

	Construction	Bulk insulation R-value	Reflective
Location	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

Width	Sealed/unsealed
[mm]	
50	Sealed
200	Sealed
50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

	Added insulation				
Construction	[R-value]	Solar absorptance	Roof shade [colour]		
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium		

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

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

Cooling system

			Minimum efficier	ncy/ Re	commended
Appliance/ system type	Location	Fuel type	performance		pacity
No Whole of Home performan	nce assessment cor	nducted for this certificat	e.		
Heating system					
Appliance/ system type	Location	Fuel type	Minimum efficier performance	-	commended pacity
No Whole of Home performar			•	Ca	pacity
Hot water system					
			Substitution to	lerance ranges	;
		Minimum			
Appliance/ system type	Fuel type	efficiency/ performance	Zone 3 STC lower limit	Zone 3 STC upper limit	Assessed daily
No Whole of Home performan		-			louu
Pool/spa equipment					
			Minimum ef	•	commended
Appliance/ system type		Fuel type	performanc	e ca	pacity
No Whole of Home performan	nce assessment cor	nducted for this certificat	e.		
o ''	,				
Onsite renewable e	•••				
(not applicable if a Whole of	Home performant	ce assessment is not c	onducted for this ce	ertificate)	
System type		Orientation	System size	or generation	capacity
No Whole of Home performan	nce assessment cor	nducted for this certificat	e.		

Size [battery storage capacity]

No Whole of Home performance assessment conducted for this certificate.

System type



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

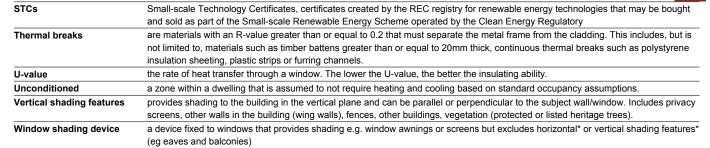
Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Glossary

cicceaij	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

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8.4 Star Rating as of 19 Feb 2024



Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. 3ECC8990BW-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 4, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*67.1Unconditioned*7.2Total74.3Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions	Volume 1
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



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

38.6 MJ/m²

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

> For more information on your dwelling's rating see: WWW.Nathers.gov.au

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling		
Modelled	35.5	3.1		
Load limits	N/A	N/A		
Eastures data	rmining lood	limite		

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=3ECC8990BW-03 When using either link, ensure you are visiting www.fr5.com.au.



*Refer to glossary.

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 4, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

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About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



No Whole of Home performance assessment conducted for this certificate.



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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	1				
Has the insulation been installed according to the NCC requirements?					
Building sealing			<u>.</u>		
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessment	is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)	-		
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check				· · · · · · · · · · · · · · · · · · ·	
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

Shading to existing fence line and house modelled as per NatHERS technical Notes

- 1 Slab on ground with suspended slab above
- 2a External & Party Walls to be Double brick cavity with cavity board insulation
- 2b- Internal Walls to be Single Skin brick wall with plasterboard or render finish
- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a

5 - Rooflights / Skylights:- N/a *Refer to glossary.

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~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

.....



Room *schedule*

Room	Zone Type	Area [m ²]
BED 2	bedroom	12.3
BATH	unconditioned	7.2
BED 1	bedroom	16.2
KITCHEN/LIVING	kitchen	38.6

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows Custom* windows Substitution tolerance ranges SHGC lower limit SHGC upper limit SHGC upper limit

No Data Available

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 2	ALM-002-01 A	W10	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W09	600	1670	awning	45.0	SW	No
BED 1	ALM-002-01 A	W	1400	1690	sliding	0.0	SW	No
KITCHEN/LIVING	ALM-002-01 A	W14	1230	1690	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No

Roof window* type and performance value

Default* roof windows

			Substitution to	olerance ranges	
Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
			Substitution to	loranco rangos	
	Window description			Maximum SHGC lower limit	

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

*Refer to glossary.

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 4, 1-7 Fergerson Avenue, Fairfield, NSW, 2165



Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Ava	ilable							
Skylight*	type and pe	rformance						
Skylight ID			Skylight o	descriptio	n	Skylight	shaft reflectan	ce
No Data Ava	ilable							
SKVIIUIII	scheolie							
	<i>schedule</i> Sky	light ID	Skylight No.	Skylight length [r		Area Orio [m²] atio		Diffuse
		light ID	Skylight No.					
Location No Data Available		-	Skylight No.					
Location No Data Available	Sky	-						

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 2	1	2700	3075	SW	0	No
BED 2	1	2700	2513	NW	0	No
BED 2	1	2701	1481	NW	0	Yes
BATH	1	2700	3093	SW	0	No
BATH	1	2700	455	SE	0	Yes
BED 1	1	2700	3635	SW	0	No
BED 1	1	2700	4698	SE	0	No
BED 1	1	2700	2139	NE	0	Yes
KITCHEN/LIVING	1	2700	4349	NW	0	No
KITCHEN/LIVING	1	2700	3352	SE	0	Yes
KITCHEN/LIVING	1	2701	3790	NE	0	Yes
KITCHEN/LIVING	1	2700	4083	NE	3035	Yes

Internal wall type

3ECC8990BW-03 NatHERS Certificate			8.1 Star Rating as of 19 Feb 2024
Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Single Brick Finished	42.9	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
BED 2	FR5 - CSOG: Slab on Ground	12.3	Enclosed	R0.0	Carpet
BATH	FR5 - CSOG: Slab on Ground	7.2	Enclosed	R0.0	Tiles
BED 1	FR5 - CSOG: Slab on Ground	16.2	Enclosed	R0.0	Carpet
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	38.6	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction	Bulk insulation R-value	Reflective
	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
BED 2	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
BED 1	2	Downlights	50	50	Sealed
KITCHEN/LIVING	10	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

	Added insulation				
Construction	[R-value]	Solar absorptance	Roof shade [colour]		
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium		

Thermal bridging schedule for steel frame elements

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

HOUSE

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.

			Minimum efficiend	cy/	Reco	ommended
Appliance/ system type	Location	Fuel type	performance		сара	city
No Whole of Home perform	ance assessment cor	nducted for this certificat	e.			
Heating system						
			Minimum efficien	cy/		ommended
Appliance/ system type	Location	Fuel type	performance		сара	city
No Whole of Home perform	ance assessment cor	nducted for this certificat	e.			
Hot water system						
			Substitution tole	erance ran	nges	
		Minimum				
A	-	efficiency/	Zone 3 STC	Zone 3 S		Assessed daily
Appliance/ system type	Fuel type					
No Whole of Home perform		performance iducted for this certificat	lower limit e.	upper lir	mit	load
No Whole of Home perform		nducted for this certificat	e. Minimum effi	ciency/	Reco	ommended
No Whole of Home perform Pool/spa equipment Appliance/ system type	ance assessment cor	nducted for this certificat	e. Minimum effi performance	ciency/		ommended
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable	ance assessment cor ance assessment cor energy scheo	Fuel type nducted for this certificat	e. Minimum effi performance e.	ciency/	Reco	ommended
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable (not applicable if a Whole of	ance assessment cor ance assessment cor energy scheo	Fuel type nducted for this certificat	e. Minimum effi performance e.	ciency/ rtificate)	Reco capa	ommended city
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable (not applicable if a Whole of System type	ance assessment cor ance assessment cor energy scheo of Home performanc	Fuel type nducted for this certificat ducted for this certificat ducted for this certificat ce assessment is not c Orientation	e. Minimum effi performance e. conducted for this cer System size o	ciency/ rtificate)	Reco capa	ommended city
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable (not applicable if a Whole of System type No Whole of Home perform	ance assessment cor ance assessment cor energy scheo of Home performanc	Fuel type nducted for this certificat ducted for this certificat ducted for this certificat ce assessment is not c Orientation	e. Minimum effi performance e. conducted for this cer System size o	ciency/ rtificate)	Reco capa	ommended city
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable (not applicable if a Whole of System type No Whole of Home perform Battery schedule	ance assessment cor ance assessment cor energy scheo of Home performance ance assessment cor	Fuel type nducted for this certificat ducted for this certificat ducted for this certificat Orientation nducted for this certificat	Minimum effi performance re. conducted for this cer System size of re.	ciency/ rtificate) or genera	Reco capa	ommended city
No Whole of Home perform Pool/spa equipment Appliance/ system type No Whole of Home perform Onsite renewable (not applicable if a Whole of System type	ance assessment cor ance assessment cor energy scheo of Home performance ance assessment cor	Fuel type nducted for this certificat ducted for this certificat ducted for this certificat Orientation nducted for this certificat	Minimum effi performance re. conducted for this cer System size of re.	tificate) or genera	Reco capa	ommended city apacity



Explanatory Notes

About this report

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

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

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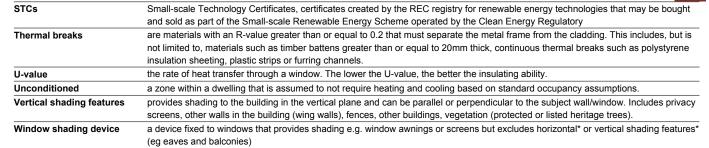
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Glossary

cicceaij	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

3ECC8990BW-03 NatHERS

8.1 Star Rating as of 19 Feb 2024



Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. SHFLDDYG8B-02

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

- Address
- Lot/DP NCC Class* Floor/all Floors Type

5, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan Prepared by

29/06/2023 KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*49.9Unconditioned*7.7Total57.6Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	anisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions State/Territory variation Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating



NATIONWIDE HOUSE ENERGY RATING SCHEME

R

41.2 MJ/m²

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

> For more information on your dwelling's rating see: WWW.Nathers.gov.au

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	39	2.2
Load limits	N/A	N/A
Features dete	rmining load	limits
Floor type		NI/A

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=SHFLDDYG88 -02 When using either link, ensure you are visiting www.fr5.com.au.



*Refer to glossary.

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 5, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

SHFLDDYG8B-02 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Page 2 of 11

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



of Home performance assessment conducted for this certificate.



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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	,				
Has the insulation been installed according to the NCC requirements?					
Building sealing			1	II	
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessment	is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

Shading to existing fence line and house modelled as per NatHERS technical Notes

- 1 Slab on ground with suspended slab above
- 2a External & Party Walls to be Double brick cavity with cavity board insulation
- 2b- Internal Walls to be Single Skin brick wall with plasterboard or render finish
- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a

5 - Rooflights / Skylights:- N/a *Refer to glossary.

SHFLDDYG8B-02 NatHERS Certificate



~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

Room	Zone Type	Area [m ²]
BED 1	bedroom	14.7
BATH	unconditioned	7.7
KITCHEN/LIVING	kitchen	35.1

Window and glazed door type and performance

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	W16	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W18	600	680	awning	90.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-001-01 A	W19	1400	730	awning	90.0	NW	No
KITCHEN/LIVING	ALM-002-01 A	W17	1230	1690	sliding	45.0	SW	No

Roof window* type and performance value

Default* roof windows

				Substitution tolerance ranges		
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Available						
Custom* roof window	S					
				Substitution to	lerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit	



Roof window* schedule

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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1000	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No
2	FR5 - Single Brick Finished	0.5	Medium		No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2701	1785	SE	0	Yes
BED 1	1	2700	2394	SE	0	No
BED 1	2	2400	136	NW	0	Yes
BED 1	1	2700	2029	NW	0	Yes
BED 1	1	2700	3543	SW	0	No
BATH	1	2700	3248	NE	0	Yes
BATH	1	2700	1075	NW	0	Yes
BATH	1	2700	2389	SE	0	No
KITCHEN/LIVING	1	2700	4118	NE	2467	Yes
KITCHEN/LIVING	1	2700	6471	NW	0	Yes
KITCHEN/LIVING	1	2700	3696	SW	0	Yes
KITCHEN/LIVING	1	2700	2868	SE	0	No



Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Single Brick Finished	27	

Floor type

			Sub-floor	Added insulation		
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering	
BED 1	FR5 - CSOG: Slab on Ground	14.7	Enclosed	R0.0	Carpet	
BATH	FR5 - CSOG: Slab on Ground	7.7	Enclosed	R0.0	Tiles	
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	35.2	Enclosed	R0.0	Tiles	

Ceiling type

Location	Construction	Bulk insulation R-value	Reflective
	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Туре	Height [mm]	Width [mm]	Sealed/unsealed
BED 1	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
KITCHEN/LIVING	8	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

	Added insulation		
Construction	[R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

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

Appliance schedule

SHFLDDYG8B-02 NatHERS Certificate



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

Cooling system Minimum efficiency/ Recommended Appliance/ system type Fuel type performance Location capacity No Whole of Home performance assessment conducted for this certificate. Heating system Minimum efficiency/ Recommended Appliance/ system type performance capacity Location Fuel type No Whole of Home performance assessment conducted for this certificate. Hot water system Substitution tolerance ranges Minimum efficiency/ Zone 3 STC Zone 3 STC Assessed daily Appliance/ system type Fuel type performance lower limit upper limit load No Whole of Home performance assessment conducted for this certificate. Pool/spa equipment Minimum efficiency/ Recommended Appliance/ system type Fuel type performance capacity No Whole of Home performance assessment conducted for this certificate. Onsite renewable energy *schedule*

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

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

Battery schedule

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

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

7.9 Star Rating as of 19 Feb 2024



Explanatory Notes

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Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

SHFLDDYG8B-02 NatHERS

7.9 Star Rating as of 19 Feb 2024



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 Regulatory
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, continuous thermal breaks such as polystyrene
	insulation sheeting, plastic strips or furring channels.
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. ZEA4JPEHA0-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

- Address
- Lot/DP NCC Class* Floor/all Floors Type
- 6, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan Prepared by

KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

29/06/2023

Assessed floor	area [m²]*
Conditioned*	67.8
Unconditioned*	7.4
Total	75.2
Garage	-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Organ	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions	Volume 1
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



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

37.2 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	35.8	1.4
Load limits	N/A	N/A
	ган	

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=ZEA4JPEHA0-03 When using either link, ensure you are visiting www.fr5.com.au.



ZEA4JPEHA0-03 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



certificate.



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



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

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

Shading to existing fence line and house modelled as per NatHERS technical Notes

- 1 Slab on ground with suspended slab above
- 2a External & Party Walls to be Double brick cavity with cavity board insulation
- 2b- Internal Walls to be Single Skin brick wall with plasterboard or render finish
- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a

5 - Rooflights / Skylights:- N/a *Refer to glossary.

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~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

.....



Room schedule

Room	Zone Type	Area [m ²]
KITCHEN/LIVING	kitchen	42.1
BED 1	bedroom	14.3
BATH	unconditioned	7.4
BED 2	bedroom	11.5

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
KITCHEN/LIVING	ALM-002-01 A	W15	1230	1690	sliding	45.0	SW	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
BED 1	ALM-001-01 A	W23	1400	730	awning	90.0	SW	No
BED 1	ALM-001-01 A	W24	1400	730	awning	90.0	SW	No
BED 1	ALM-002-01 A	W21	1400	1690	sliding	45.0	SE	No
BATH	ALM-001-01 A	W22	600	1670	awning	45.0	SE	No
BED 2	ALM-002-01 A	W20	1400	1690	sliding	45.0	NE	No

Roof window* type and performance value

Default* roof windows

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

Custom* roof windows

Substitution tolerance ranges

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8.2 Star Rating as of 19 Feb 2024



 Window ID
 Window description
 U-value*
 SHGC lower limit
 SHGC upper limit

 No Data Available
 No Data Available
 SHGC lower limit
 SHGC upper limit

Roof window* *schedule*

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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1000	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

		Usinht	\ A /; d4b		Horizontal shading	Vertical cheding
Location	Wall ID	Height [mm]	Width [mm]	Orientation	feature* maximum projection [mm]	Vertical shading feature* (yes/no)
KITCHEN/LIVING	1	2700	8280	NW	0	No
KITCHEN/LIVING	1	2700	373	NW	0	Yes
KITCHEN/LIVING	1	2700	3932	SW	0	Yes
KITCHEN/LIVING	1	2700	3824	NE	3027	Yes
BED 1	1	2700	4283	SW	0	No
BED 1	1	2700	3602	SE	0	Yes
BED 1	1	2700	1562	NW	0	Yes
BATH	1	2700	3145	SE	0	Yes
BATH	1	2700	1052	NE	0	Yes
BATH	1	2700	447	SW	0	Yes
BED 2	1	2700	3135	SE	0	Yes

ZEA4JPEHA0-03 NatHERS Certificate					8.2 Star	Rating as of 19 Feb 2024	
BED 2	1	2700	3656	NE	3094	Yes	

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Single Brick Finished	42.4	

Floor type

			Sub-floor	Added insulation	
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
KITCHEN/LIVING	FR5 - CSOG: Slab on Ground	42.1	Enclosed	R0.0	Tiles
BED 1	FR5 - CSOG: Slab on Ground	14.3	Enclosed	R0.0	Carpet
BATH	FR5 - CSOG: Slab on Ground	7.4	Enclosed	R0.0	Tiles
BED 2	FR5 - CSOG: Slab on Ground	11.5	Enclosed	R0.0	Tiles

Ceiling type

	Construction	Bulk insulation R-value	Reflective
Location	material/type	[may include edge batt values]	wrap*
No Data Available			

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
KITCHEN/LIVING	10	Downlights	50	50	Sealed
BED 1	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
BED 2	2	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
KITCHEN/LIVING	1	1200
BED 1	1	1200

Roof type

	Added insulation		
Construction	[R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

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



No Data Available

Appliance schedule

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

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

Appliance/ system type	Location	Fuel type	Minimum efficier performance	-	ecommended pacity	
No Whole of Home perform	ance assessment co	nducted for this certificat	e.		-	
Heating system						
A			Minimum efficie	-	ecommended	
Appliance/ system type	Location	Fuel type	performance	Ca	pacity	
No Whole of Home perform			е.			
Hot water system			Substitution to	lerance range	S	
		Minimum		U		
		efficiency/	Zone 3 STC	Zone 3 STC	Assessed daily	
Appliance/ system type	Fuel type	performance	lower limit	upper limit	load	
No Whole of Home perform	ance assessment co	nducted for this certificat	e.			
Pool/spa equipment						
			Minimum ef	•	ecommended	
Appliance/ system type		Fuel type	performanc	e ca	capacity	
No Whole of Home perform	ance assessment co	nducted for this certificat	e.			
Onsite renewable	enerav scher	dule				
(not applicable if a Whole			onducted for this co	ertificate)		
System type		Orientation	System size	e or generation	n capacity	
		nducted for this certificat	_			

Battery schedule

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

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



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
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Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
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Reflective wrap (also known	
as foil)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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ZEA4JPEHA0-03 NatHERS

8.2 Star Rating as of 19 Feb 2024



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	and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory				
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, continuous thermal breaks such as polystyrene				
	insulation sheeting, plastic strips or furring channels.				
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)				

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. CF87Y2KHSU-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 7, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*66.7Unconditioned*7.2Total73.9Garage-

Exposure type suburban NatHERS climate zone 28 Richmond



Name	ecerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions State/Territory variation

Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating

NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

The more stars the more energy efficient

48.4 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	35	13.4
Load limits	N/A	N/A
Features deter	rmining load	limits
Floor type		N/A

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=CF87Y2KHSU-03 When using either link, ensure you are visiting www.fr5.com.au.



CF87Y2KHSU-03 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Page 2 of 11

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.



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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	1				
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessmen	t is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation

*Refer to glossary.

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 7, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

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7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

.....



Room schedule

Room	Zone Type	Area [m²]
BED 2	bedroom	11.2
KITCHEN/LIVING	kitchen	39.4
BATH	unconditioned	7.2
BED 1	bedroom	16.1

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 2	ALM-002-01 A	W31	1400	1690	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	W30	1400	1690	sliding	45.0	NW	No
KITCHEN/LIVING	ALM-002-01 A	-SIDELITE	2400	590	fixed	0.0	SW	No
BED 1	ALM-001-01 A	W28	1400	730	awning	90.0	SW	No
BED 1	ALM-002-01 A	W29	1400	1690	sliding	45.0	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					
				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit



No Data Available

Roof window* schedule

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

Skylight* type and performance

No Data Available	Skylight ID	Skylight description	Skylight shaft reflectance	
	No Data Available			

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2400	1100	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

		Height	Width		Horizontal shading feature* maximum	Vertical shading
Location	Wall ID	[mm]	[mm]	Orientation		feature* (yes/no)
BED 2	1	2700	581	NW	0	Yes
BED 2	1	2701	1803	SE	0	No
BED 2	1	2700	1243	SE	0	Yes
BED 2	1	2700	3847	NE	1847	No
KITCHEN/LIVING	1	2700	3928	NE	2427	Yes
KITCHEN/LIVING	1	2700	7927	NW	0	No
KITCHEN/LIVING	1	2700	2966	SW	2427	Yes
KITCHEN/LIVING	1	2700	1735	SE	0	No
BATH	1	2700	2334	SE	0	No
BED 1	1	2701	1501	SE	0	No
BED 1	1	2700	1839	SE	0	No
BED 1	1	2700	2390	NW	3160	Yes
BED 1	1	2700	4816	SW	0	No

NATIONWIDE HOOUSE

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	46.3	

Floor type

			Sub-floor	Added insulat	ion
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
BED 2	FR5 - 300mm concrete slab	11.2	Enclosed	R0.0	Carpet
KITCHEN/LIVING	FR5 - 300mm concrete slab	39.4	Enclosed	R0.0	Tiles
BATH	FR5 - 300mm concrete slab	7.2	Enclosed	R0.0	Tiles
BED 1	FR5 - 300mm concrete slab	16.1	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
BED 2	Plasterboard	R1.3	No
KITCHEN/LIVING	Plasterboard	R1.3	No
BATH	Plasterboard	R1.3	No
BED 1	Plasterboard	R1.3	No

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
BED 2	2	Downlights	50	50	Sealed
KITCHEN/LIVING	10	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
BED 1	2	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
KITCHEN/LIVING	1	1200
BED 1	1	1200

Roof type

	Added insulation	Added insulation				
Construction	[R-value]	Solar absorptance	Roof shade [colour]			
Cont:Attic-Continuous	3.5	0.5	Medium			

Thermal bridging schedule for steel frame elements

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



No Data Available

Appliance schedule

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

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

Appliance/ system type	Location	Fuel type	Minimum efficie performance	ncy/		commended bacity
No Whole of Home perform	ance assessment co		•			
Heating system						
Appliance/ system type	Location	Fuel type	Minimum efficie performance	ncy/		commended bacity
No Whole of Home perform			-		Եգբ	Jacity
Hot water system						
			Substitution to	lerance rar	nges	
		Minimum				
	Fuelture	efficiency/	Zone 3 STC	Zone 3 S		Assessed daily
Appliance/ system type	Fuel type	performance	lower limit	upper lii	nit	load
No Whole of Home perform			e			
Pool/spa equipment						
Appliance/ system type		Fuel type	Minimum ef performanc	-		commended bacity
No Whole of Home perform	ance assessment co	nducted for this certificat	е.			
Onsite renewable (not applicable if a Whole of			onducted for this c	ertificate)		
System type		Orientation	System size	e or genera	tion	capacity
		nducted for this certificat	_			

Battery schedule

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

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



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

CF87Y2KHSU-03 NatHERS

7.6 Star Rating as of 19 Feb 2024



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 Regulatory		
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, continuous thermal breaks such as polystyrene		
	insulation sheeting, plastic strips or furring channels.		
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)		

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. JVLAOG88EX-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 8, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]* Conditioned* 50.2 Unconditioned* 7.9 Total 58.1 Garage - Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.au
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions	Volume 1
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



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

36.3 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling				
Modelled	28.8	7.5				
Load limits	N/A	N/A				
Features determining load limits						

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=JVLAOG88EX-03 When using either link, ensure you are visiting www.fr5.com.au.



About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Page 2 of 11

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



of Home performance assessment conducted for this certificate.



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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	1				
Has the insulation been installed according to the NCC requirements?					
Building sealing			<u>.</u>		
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessment	is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)	-		
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check				· · · · · · · · · · · · · · · · · · ·	
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation



7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

Room	Zone Type	Area [m ²]
BED 1	bedroom	14.6
BATH	unconditioned	7.9
KITCHEN/LIVING	kitchen	35.6

Window and glazed door type and performance

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	-DT01	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	-DT01	600	680	awning	90.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	1230	1690	sliding	45.0	SW	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No

Roof window* type and performance value

Default* roof windows

				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					
				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

8.3 Star Rating as of 19 Feb 2024



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

Skylight* type and performance

Skylight ID		Skylight description		Skylight shaft reflectance		e	
No Data Available							
Skylight* sci	hedule						
, ,			Skylight shaft	Area	Orient-	Outdoor	
Location	Skylight ID	Skylight No.	length [mm]	[m²]	ation	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*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

					Horizontal shading	
Location	Wall ID	Height [mm]	Width [mm]	Orientation	feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2700	3512	SW	0	No
BED 1	1	2700	2147	SE	0	Yes
BED 1	1	2700	3762	NW	0	No
BED 1	1	2700	403	NW	0	Yes
BATH	1	2700	2378	NW	0	No
BATH	1	2700	1074	SE	0	Yes
BATH	1	2700	3305	NE	0	Yes
KITCHEN/LIVING	1	2700	2910	NW	0	No
KITCHEN/LIVING	1	2700	3773	SW	0	Yes
KITCHEN/LIVING	1	2700	6499	SE	0	No
KITCHEN/LIVING	1	2700	4020	NE	2549	Yes

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	27.4	



Floor type

			Sub-floor	Added insulat	ion
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
BED 1	FR5 - 300mm concrete slab	14.6	Enclosed	R0.0	Carpet
BATH	FR5 - 300mm concrete slab	7.9	Enclosed	R0.0	Tiles
KITCHEN/LIVING	FR5 - 300mm concrete slab	35.6	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
BED 1	Plasterboard	R3.5	No
BATH	Plasterboard	R3.5	No
KITCHEN/LIVING	Plasterboard	R3.5	No

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
BED 1	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
KITCHEN/LIVING	8	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

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

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

Cooling system				
Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity



No Whole of Home performance assessment conducted for this certificate.

Heating system

			Minimum efficiency/	Reco	ommended
Appliance/ system type	Location	Fuel type	performance		city
No Whole of Home perform	ance assessment co	nducted for this certificat	9.		
Hot water system					
			Substitution toleran	ce ranges	
		Minimum			
		efficiency/			Assessed daily
Appliance/ system type	Fuel type	performance	lower limit up	oper limit	load
No Whole of Home perform	ance assessment co	nducted for this certificat	9.		
Pool/spa equipment			Minimum officiar		
Appliance/ system type		Fuel type	Minimum efficier performance	icy/ Reco capa	ommended city
No Whole of Home perform	ance assessment co	nducted for this certificate	Э.		
Onaita ranawahla	anaray acho				
	energy sched				
		oo oooooomontio noto	anduatad far thia aartifia	ato)	
	of Home performan	ce assessment is not c	onducted for this certific	ally	
(not applicable if a Whole (of Home performan	Orientation	System size or g		apacity
(not applicable if a Whole		Orientation	System size or g		apacity
(not applicable if a Whole System type		Orientation	System size or g		apacity
(not applicable if a Whole System type No Whole of Home perform		Orientation	System size or g		apacity
(not applicable if a Whole System type No Whole of Home perform Battery schedule	ance assessment co	Orientation nducted for this certificat	System size or g	eneration c	apacity
(not applicable if a Whole System type	ance assessment co	Orientation nducted for this certificat	System size or g	eneration ca	



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

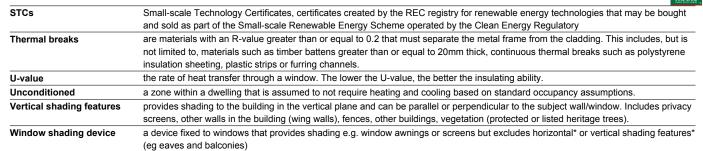
Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Glossary

Ciccoury	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with
	scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	terrain with numerous, please wanted abstructions over 10 m e.g. eity and industrial erges
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
Skylight (also known as roof lights)	f or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.

JVLAOG88EX-03 NatHERS

8.3 Star Rating as of 19 Feb 2024



Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. Z9HNIOCENK-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 9, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan 29/06/2023 Prepared by KENNEDY

KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*50.2Unconditioned*7.9Total58.1Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.a
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Or	rganisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions State/Territory variation

Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

32 MJ/m²

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

> For more information on your dwelling's rating see: WWW.Nathers.gov.au

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	24.4	7.6
Load limits	N/A	N/A

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=Z9HNIOCENK-03 When using either link, ensure you are visiting www.fr5.com.au.



*Refer to glossary. Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 9, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Page 2 of 11

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



conducted for this

certificate.



Certificate check	Approval stage		Construction stage		
The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.	Assesso	Consen surveyo	Builder	Consen surveyo	Occupa
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?					
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?					
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS- stamped plans or as installed match what is shown in <i>Window and glazed door</i> <i>schedule</i> ' and <i>'Roof window schedule'</i> tables on this Certificate?					
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Does the external wall shade (colour) match what is shown in the <i>'External wall type'</i> table on this Certificate?					
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the <i>'Floor type'</i> table on this certificate?					
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?					
Ceiling					
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Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the <i>'Roof type'</i> table on this Certificate?					
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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.					
Exposure*					
Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".					
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?					



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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation



7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

Room	Zone Type	Area [m ²]
BED 1	bedroom	14.6
BATH	unconditioned	7.9
KITCHEN/LIVING	kitchen	35.6

Window and glazed door type and performance

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	W37	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W39	600	680	awning	90.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	W38	1230	1690	sliding	45.0	SW	No

Roof window* type and performance value

Default* roof windows

				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					
				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule



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

Skylight* type and performance

Skylight ID		Skylight description		Skylight shaft reflectance			e
No Data Available							
Skylight* sci	hedule						
, ,			Skylight shaft	Area	Orient-	Outdoor	
Location	Skylight ID	Skylight No.	length [mm]	[m²]	ation	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*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

					Horizontal shading	
Location	Wall ID	Height [mm]	Width [mm]	Orientation	feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2700	403	SE	0	Yes
BED 1	1	2700	3762	SE	0	No
BED 1	1	2700	2147	NW	0	Yes
BED 1	1	2700	3512	SW	0	No
BATH	1	2700	3305	NE	0	Yes
BATH	1	2700	1074	NW	0	Yes
BATH	1	2700	2378	SE	0	No
KITCHEN/LIVING	1	2700	4020	NE	2549	No
KITCHEN/LIVING	1	2700	6499	NW	0	No
KITCHEN/LIVING	1	2700	3773	SW	0	Yes
KITCHEN/LIVING	1	2700	2910	SE	0	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	27.4	



Floor type

			Sub-floor	Added insulation		
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering	
BED 1	FR5 - 300mm concrete slab	14.6	Enclosed	R0.0	Carpet	
BATH	FR5 - 300mm concrete slab	7.9	Enclosed	R0.0	Tiles	
KITCHEN/LIVING	FR5 - 300mm concrete slab	35.6	Enclosed	R0.0	Tiles	

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
BED 1	Plasterboard	R3.5	No
BATH	Plasterboard	R3.5	No
KITCHEN/LIVING	Plasterboard	R3.5	No

Ceiling penetrations*

			Height	Width		
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed	
BED 1	2	Downlights	50	50	Sealed	
BATH	1	Exhaust Fans	200	200	Sealed	
KITCHEN/LIVING	8	Downlights	50	50	Sealed	

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1200

Roof type

Construction	[R-value]	Solar absorptance	Roof shade [colour]
Cont:Attic-Continuous	1.3	0.5	Medium

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

Cooling system				
Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity



No Whole of Home performance assessment conducted for this certificate.

Heating system

			Minimum efficiency/	Reco	ommended
Appliance/ system type	Location	Fuel type	performance	сара	city
No Whole of Home perform	ance assessment co	nducted for this certificat	9.		
Hot water system					
			Substitution toleran	ce ranges	
		Minimum			
		efficiency/			Assessed daily
Appliance/ system type	Fuel type	performance	lower limit up	oper limit	load
No Whole of Home perform	ance assessment co	nducted for this certificat	9.		
Pool/spa equipment			Minimum officiar		
Appliance/ system type		Fuel type	Minimum efficier performance	icy/ Reco capa	ommended city
No Whole of Home perform	ance assessment co	nducted for this certificate	Э.		
Onaita ranawahla	anaray acho				
	energy sched				
		oo oooooomontio noto	anduatad far thia aartifia	ato)	
	of Home performan	ce assessment is not c	onducted for this certific	ally	
(not applicable if a Whole (of Home performan	Orientation	System size or g		apacity
(not applicable if a Whole		Orientation	System size or g		apacity
(not applicable if a Whole System type		Orientation	System size or g		apacity
(not applicable if a Whole System type No Whole of Home perform		Orientation	System size or g		apacity
(not applicable if a Whole System type No Whole of Home perform Battery schedule	ance assessment co	Orientation nducted for this certificat	System size or g	eneration c	apacity
(not applicable if a Whole System type	ance assessment co	Orientation nducted for this certificat	System size or g	eneration ca	



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.

Z9HNIOCENK-03 NatHERS

8.5 Star Rating as of 19 Feb 2024



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 Regulatory
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, continuous thermal breaks such as polystyrene
	insulation sheeting, plastic strips or furring channels.
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. X4HA0F5X4Z-06

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 10, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan Prepared by 29/06/2023 KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

Assessed floor area [m²]*Conditioned*67.1Unconditioned*7.2Total74.3Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

eCerts Australia
eCerts
info@ecerts.com.a
1300323787
HERA10205
nisation
No

NCC Requirements

NCC provisions State/Territory variation Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating

NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

The more stars the more energy efficient

41.1 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	32.1	9
Load limits	N/A	N/A
		line it a

Features determining load limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=X4HA0F5X4Z-06 When using either link, ensure you are visiting www.fr5.com.au.



*Refer to glossary. Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 10, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

X4HA0F5X4Z-06 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:





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



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

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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation

X4HA0F5X4Z-06 NatHERS Certificate



7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

.....



Room *schedule*

Room	Zone Type	Area [m ²]
BED 2	bedroom	12.3
BATH	unconditioned	7.2
BED 1	bedroom	16.2
KITCHEN/LIVING	kitchen	38.6

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows Custom* windows Maximum Window ID Window description U-value* SHGC* SHGC lower limit SHGC upper limit No. Data Available

No Data Available

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 2	ALM-002-01 A	W35	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W34	600	1670	awning	45.0	SW	No
BED 1	ALM-002-01 A	W33	1400	1690	sliding	0.0	SW	No
KITCHEN/LIVING	ALM-002-01 A	W40	1230	1690	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No

Roof window* type and performance value

Default* roof windows

Window ID				Substitution to	lerance ranges
	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					
Custom* roof windows					

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



Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation		Indoor shade
No Data Ava	ailable							
Skylight*	type and pe	rformance						
Skylight ID			Skylight c	descriptio	n	Skyligh	nt shaft reflectand	e
No Data Ava	ailable							
Skylight*	* schodulo							
Skylight*	* <i>schedule</i> skyl	light ID	Skylight No.	Skylight length [n			ient- Outdoor on shade	Diffuse
		light ID	Skylight No.					Diffuse
Location No Data Available		-	Skylight No.					Diffuse
Location No Data Available	Skyl	-						Diffuse

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
1	2700	3075	SW	0	No
1	2700	2513	NW	0	No
1	2701	1481	NW	0	Yes
1	2700	3093	SW	0	No
1	2700	455	SE	0	Yes
1	2700	3635	SW	0	No
1	2700	4698	SE	0	No
1	2700	2139	NE	0	Yes
1	2700	4349	NW	0	No
1	2700	3352	SE	0	Yes
1	2701	3790	NE	0	No
1	2700	4083	NE	3035	Yes
	1 1 1 1 1 1 1 1 1 1 1 1 1	Wall ID [mm] 1 2700 1 2700 1 2701 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700 1 2700	Wall ID[mm][mm]12700307512700251312700251312701148112700309312700455127004698127002139127004349127003352127013790	Wall ID [mm] [mm] Orientation 1 2700 3075 SW 1 2700 2513 NW 1 2700 2513 NW 1 2701 1481 NW 1 2700 3093 SW 1 2700 3093 SW 1 2700 3635 SE 1 2700 4698 SE 1 2700 2139 NE 1 2700 4349 NW 1 2700 3352 SE 1 2701 3790 NE	Height [mm] Width [mm] Grientation feature* maximum projection [mm] 1 2700 3075 SW 0 1 2700 2513 NW 0 1 2701 1481 NW 0 1 2700 3093 SW 0 1 2700 3093 SW 0 1 2700 3093 SW 0 1 2700 3635 SE 0 1 2700 4698 SE 0 1 2700 2139 NE 0 1 2700 4349 NW 0 1 2700 3352 SE 0 1 2700 3352 SE 0 1 2701 3790 NE 0

Internal wall type

X4HA0F5X4Z Certificate	-06 NatHERS		7.9 Star Rating as of 19 Feb 2024
Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	42.9	

Floor type

			Sub-floor	Added insulation		
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering	
BED 2	FR5 - 300mm concrete slab	12.3	Enclosed	R0.0	Carpet	
BATH	FR5 - 300mm concrete slab	7.2	Enclosed	R0.0	Tiles	
BED 1	FR5 - 300mm concrete slab	16.2	Enclosed	R0.0	Carpet	
KITCHEN/LIVING	FR5 - 300mm concrete slab	38.6	Enclosed	R0.0	Tiles	

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
BED 2	Plasterboard	R3.5	No
BATH	Plasterboard	R3.5	No
BED 1	Plasterboard	R3.5	No
KITCHEN/LIVING	Plasterboard	R3.5	No

Ceiling penetrations*

			Height	Width	
Location	Quantity	Туре	[mm]	[mm]	Sealed/unsealed
BED 2	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
BED 1	2	Downlights	50	50	Sealed
KITCHEN/LIVING	10	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1800

Roof type

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

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

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

			Minimum efficiency/	Red	commended	
Appliance/ system type	Location	Fuel type	performance	cap	acity	
No Whole of Home perform	ance assessment co	nducted for this certificat	е.			
Heating system						
			Minimum efficiency/ Recommend		commended	
Appliance/ system type	Location	Fuel type	performance	cap	capacity	
No Whole of Home perform	ance assessment co	nducted for this certificat	е.			
Hot water system						
			Substitution tolerance ranges			
		Minimum				
		efficiency/		one 3 STC	Assessed daily	
Appliance/ system type No Whole of Home perform	Fuel type	performance		pper limit	load	
Pool/spa equipment						
			Minimum efficie	ncy/ Red	commended	
Appliance/ system type	ppliance/ system type		performance	-		
No Whole of Home perform	ance assessment co	nducted for this certificat	e.			
Onsite renewable	energy sched	lule				
	of Home performan	ce assessment is not o	onducted for this certifie	cate)		
			System size or generation capacity		capacity	
(not applicable if a Whole		Orientation	System size or g	Jeneration		
(not applicable if a Whole	ance assessment co			generation		
(not applicable if a Whole System type No Whole of Home perform	ance assessment co			jeneration		
(not applicable if a Whole System type No Whole of Home perform Battery <i>schedule</i>		nducted for this certificat	e.			
(not applicable if a Whole System type		nducted for this certificat	e.	cate)		



Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

Disclaimer

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

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

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

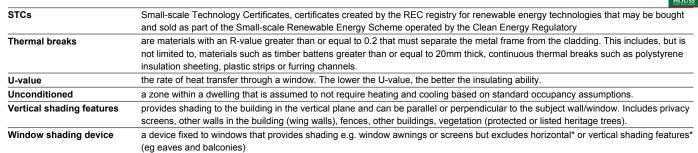
Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

Glossary

cicceaij	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with
	scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	······································
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Net zero home	a home that achieves a net zero energy value*.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap and emissivity value, it provides insulative
as foil)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
Skylight (also known as roof lights)	f or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.

X4HA0F5X4Z-06 NatHERS

7.9 Star Rating as of 19 Feb 2024



*Refer to glossary. Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 10, 1-7 Fergerson Avenue, Fairfield, NSW, 2165

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. 1SU191JOFP-02

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

- Lot/DP NCC Class* Floor/all Floors Type
- 11, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan29/06/2023Prepared byKENNEDY ASSOCIATES ARCHITECT

Construction and environment

Assessed floor area [m²]*Conditioned*51.4Unconditioned*7.9Total59.3Garage-

Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia
Business name	eCerts
Email	info@ecerts.com.a
Phone	1300323787
Accreditation No.	HERA10205
Assessor Accrediting Orga	nisation
HERA	
Declaration of interest	No

NCC Requirements

NCC provisions	Volume 1
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



NATIONWIDE HOUSE ENERGY RATING SCHEME

(R)

40.1 MJ/m²

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

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

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	32.2	7.9
Load limits	N/A	N/A
Features deter	rmining load	limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=1SU191JOFP-02 When using either link, ensure you are visiting www.fr5.com.au.



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About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

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Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:





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



	Approval	stage	Construc stage	tion	
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method					
Has the insulation been installed according to the NCC requirements?					
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessmen	t is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)			
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation

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7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges



Room *schedule*

Room	Zone Type	Area [m ²]
BED 1	bedroom	14.8
BATH	unconditioned	7.9
KITCHEN/LIVING	kitchen	36.6

Window and glazed door type and performance

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
BED 1	ALM-002-01 A	W45	1400	1690	sliding	45.0	SW	No
BATH	ALM-001-01 A	W48	600	680	awning	90.0	NE	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
KITCHEN/LIVING	ALM-001-01 A	W47	1400	730	awning	90.0	NW	No
KITCHEN/LIVING	ALM-002-01 A	W46	1230	1690	sliding	45.0	SW	No

Roof window* type and performance value

Default* roof windows

				Substitution tolerance ranges		
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit	
No Data Available						
Custom* roof windows	i					
				Substitution to	lerance ranges	
		Maximum		SHCC lower limit	SHGC upper limit	
Window ID	Window description	U-value*	SHGC*	SHGC lower limit	Si IGC upper innit	



Roof window* schedule

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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance	
No Data Available			

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2100	920	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
BED 1	1	2701	732	SE	0	Yes
BED 1	1	2701	1173	SE	0	No
BED 1	1	2700	2260	SE	0	No
BED 1	1	2700	2147	NW	0	Yes
BED 1	1	2700	3533	SW	0	No
BATH	1	2700	3262	NE	0	Yes
BATH	1	2700	1075	NW	0	Yes
BATH	1	2700	2398	SE	0	No
KITCHEN/LIVING	1	2700	4118	NE	2467	No
KITCHEN/LIVING	1	2700	6630	NW	0	Yes
KITCHEN/LIVING	1	2700	3773	SW	0	Yes
KITCHEN/LIVING	1	2700	2958	SE	0	No

Internal wall type

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Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	27.7	

Floor type

			Sub-floor	Added insulat	ion
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
BED 1	FR5 - 300mm concrete slab	14.8	Enclosed	R0.0	Carpet
BATH	FR5 - 300mm concrete slab	7.9	Enclosed	R0.0	Tiles
KITCHEN/LIVING	FR5 - 300mm concrete slab	36.6	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
BED 1	Plasterboard	R3.5	No
BATH	Plasterboard	R3.5	No
KITCHEN/LIVING	Plasterboard	R3.5	No

Ceiling penetrations*

Location	Quantity	Туре	Height [mm]	Width [mm]	Sealed/unsealed
BED 1	2	Downlights	50	50	Sealed
BATH	1	Exhaust Fans	200	200	Sealed
KITCHEN/LIVING	8	Downlights	50	50	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
BED 1	1	1200
KITCHEN/LIVING	1	1400

Roof type

	n		
Construction	[R-value]	Solar absorptance	Roof shade [colour]
Cont:Attic-Continuous	1.3	0.5	Medium

Thermal bridging schedule for steel frame elements

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

Appliance schedule

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

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Cooling system

Appliance/ system type	Location	Fuel type	performance	са	pacity
No Whole of Home performa	ance assessment co	nducted for this certificate	2.		
Heating system					
Appliance/ system type	Location	Fuel type	Minimum efficier performance	-	ecommended pacity
No Whole of Home performa	ance assessment co	nducted for this certificate	9.		
Hot water system					
		Minimum efficiency/	Substitution to	Zone 3 STC	Assessed daily
Appliance/ system type No Whole of Home performa	Fuel type ance assessment co	performance	lower limit	upper limit	load
Pool/spa equipment					
Appliance/ system type		Fuel type	Minimum ef performanc	-	ecommended pacity
No Whole of Home performa	ance assessment co	nducted for this certificate	<u>).</u>		
Onsite renewable of a whole of a whole of a system type				ertificate) e or generatior	n capacity
No Whole of Home performa	ance assessment co	nducted for this certificate	9.		
Battery schedule	of Home performan	ce assessment is not co	onducted for this ce	ertificate)	
not applicable if a Whole o System type			Size Ibatter	y storage capa	acitv1



Explanatory Notes

About this report

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

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

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

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Glossary

Ciccoury	
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
СОР	Coefficient of performance
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with
	scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	terrain with numerous, please wanted abstructions over 10 m e.g. eity and industrial erges
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or
(NCC) Class	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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
Skylight (also known as roof lights)	f or NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.

1SU191JOFP-02 NatHERS

8.1 Star Rating as of 19 Feb 2024

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 Regulatory				
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, continuous thermal breaks such as polystyrene				
	insulation sheeting, plastic strips or furring channels.				
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	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features*				
	(eg eaves and balconies)				

Nationwide House Energy Rating Scheme[®] NatHERS[®] Certificate No. BBLYSC23KO-03

Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22)

Property

Address

Lot/DP NCC Class* Floor/all Floors Type 12, 1-7 Fergerson Avenue, Fairfield, NSW, 2165 14-17/35636 Class 2 New Home

Plans

Main plan Prepared by

KENNEDY ASSOCIATES ARCHITECTS

Construction and environment

29/06/2023

Assessed floor area [m²]* Conditioned* 67.1 Unconditioned* 7.3 Total 74.4 Garage - Exposure type suburban NatHERS climate zone 28 Richmond

Accredited assessor

Name	eCerts Australia		
Business name	eCerts		
Email	info@ecerts.com.au		
Phone	1300323787		
Accreditation No.	HERA10205		
Assessor Accrediting Orga	nisation		
HERA			
Declaration of interest	No		

NCC Requirements

NCC provisions State/Territory variation

Volume 1 Yes

National Construction Code (NCC) requirements

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

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

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

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

Thermal performance star rating



NATIONWIDE HOUSE ENERGY RATING SCHEME

R

43.1 MJ/m²

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

> For more information on your dwelling's rating see: WWW.Nathers.gov.au

Thermal performance [MJ/m²] Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	35.1	8
Load limits	N/A	N/A
Features deter	mining load	limits

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

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit https://w ww.fr5.com.au/QRCodeLand ing?PublicId=BBLYSC23KO-03 When using either link, ensure you are visiting www.fr5.com.au.



BBLYSC23KO-03 NatHERS Certificate

About the ratings

Thermal performance rating

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

Whole of Home performance rating

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

Heating & Cooling Load Limits

Additional information

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

Setting options:



CSOG - Concrete Slab on Ground SF – Suspended Floor (or a mixture of CSOG and SF) Cost: 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.

*Refer to glossary.

Page 2 of 11

Predicted Whole of Home annual impact by appliance

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

Energy use:



Greenhouse gas emissions:



certificate.



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



	Approval	stage	tage Constructionstage		
Certificate check Continued	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included	in the Na	tHERS a	ssessme	nt)	
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?					
Insulation installation method	1				
Has the insulation been installed according to the NCC requirements?					
Building sealing			<u>.</u>		
Does the dwelling meet the NCC requirements for Building Sealing?					
Whole of Home performance check (not applicable if a Whole of Home perf	ormance a	ssessment	is not con	ducted)	
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?					
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the ' <i>Appliance schedule</i> ' on this Certificate?					
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?					
Additional NCC Requirements for Services (not included in the Nath	ERS asse	essment)	-		
Does the lighting meet the artificial lighting requirements specified in the NCC?					
Does the hot water system meet the additional requirements specified in the NCC?					
Provisional values* check				· · · · · · · · · · · · · · · · · · ·	
Have provisional values* been used in the assessment and, if so, are they noted in <i>'Additional notes'</i> 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

1 - Suspended Slab

2a – External & Party Walls to be Double brick cavity with cavity board insulation

2b - Internal Walls to be Timber stud wall with plasterboard finish

- 3 Generic Single Glazed Clear Glass (Nathers Default Windows) Or Glazing Equal To Or Better Than Values Given In This Report
- 4 Windows internal curtains:- N/a
- 5 Rooflights / Skylights:- N/a
- 6 Insulation at CEILING level:- R3.5 bulk insulation

BBLYSC23KO-03 NatHERS Certificate



7 - Insulation under roof material:- Anticon Blanket (R1.3)

~ The side and rear fence heights of the neighbouring building are to be 1.8m where local planning requirements are unknown.

~ Heights of the neighbouring building have been modelled to include all known site level changes that will impact on shading the dwelling being rated.

Substitution tolerance ranges

.....



Room schedule

Room	Zone Type	Area [m ²]
KITCHEN/LIVING	kitchen	41.7
BED 1	bedroom	13.7
BATH	unconditioned	7.3
BED 2	bedroom	11.7

Window and glazed door type and performance

Default* windows

					•
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ALM-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
KITCHEN/LIVING	ALM-002-01 A	W43	1230	1690	sliding	45.0	SW	No
KITCHEN/LIVING	ALM-002-01 A	-DT01	2400	2250	sliding	45.0	NE	No
BED 1	ALM-001-01 A	W41	1400	730	awning	90.0	SW	No
BED 1	ALM-001-01 A	W42	1400	730	awning	90.0	SW	No
BED 1	ALM-002-01 A	W51	1400	1690	sliding	45.0	SE	No
BATH	ALM-001-01 A	W50	600	1670	awning	45.0	SE	No
BED 2	ALM-002-01 A	W49	1400	1690	sliding	45.0	NE	No

Roof window* type and performance value

Default* roof windows

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

Custom* roof windows

Substitution tolerance ranges

BBLYSC23KO-03 NatHERS Certificate

7.9 Star Rating as of 19 Feb 2024



Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

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

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

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

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
KITCHEN/LIVING	2100	920	100.0	SW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	1 - Cavity Brick 28mm Polystyrene PB	0.3	Light	Polyurethane rigid foamed aged: R1.0 (R1.0)	No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
KITCHEN/LIVING	1	2700	8519	NW	0	No
KITCHEN/LIVING	1	2700	3959	SW	0	Yes
KITCHEN/LIVING	1	2700	3824	NE	3027	Yes
BED 1	1	2700	4209	SW	0	No
BED 1	1	2700	3557	SE	0	No
BED 1	2	2700	121	NW	0	Yes
BED 1	1	2700	1453	NW	0	Yes
BATH	1	2700	3135	SE	0	No
BATH	1	2700	1046	NE	0	Yes
BATH	1	2700	365	S	0	Yes

BBLYSC23KO-03 NatHERS Certificate

7.9 Star Rating as of 19 Feb 2024



BED 2	1	2700	3141	SE	0	Yes
BED 2	1	2700	3714	NE	3063	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	42.4	

Floor type

			Sub-floor	Added insulat	ion
Location	Construction	Area [m ²]	ventilation	[R-value]	Covering
KITCHEN/LIVING	FR5 - 300mm concrete slab	41.7	Enclosed	R0.0	Tiles
BED 1	FR5 - 300mm concrete slab	13.7	Enclosed	R0.0	Carpet
BATH	FR5 - 300mm concrete slab	7.3	Enclosed	R0.0	Tiles
BED 2	FR5 - 300mm concrete slab	11.7	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
KITCHEN/LIVING	Plasterboard	R3.5	No
BED 1	Plasterboard	R3.5	No
BATH	Plasterboard	R3.5	No
BED 2	Plasterboard	R3.5	No

Ceiling penetrations*

	Quantity Type		Height	Width		
Location		Туре	[mm]	[mm]	Sealed/unsealed	
KITCHEN/LIVING	10	Downlights	50	50	Sealed	
BED 1	2	Downlights	50	50	Sealed	
BATH	1	Exhaust Fans	200	200	Sealed	
BED 2	2	Downlights	50	50	Sealed	

Ceiling fans

Location	Quantity	Diameter [mm]
KITCHEN/LIVING	1	1200
BED 1	1	1200

Roof type

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

Thermal bridging schedule for steel frame elements

BBLYSC23KO-03 NatHERS Certificate			7.9 Star Rating as of 19 Feb 2024		
Building element	Steel section dimension [height x width, mm]	s Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]	
No Data Available					
Appliance sch	edule				
	/hole of Home performance and of 5W/m2 is used for lighting			•	

Cooling system				
			Minimum efficiency/	Recommended
Appliance/ system type	Location	Fuel type	performance	capacity

No Whole of Home performance assessment conducted for this certificate.

Heating system

			Minimum efficiency/ Recommen	Recommended	
Appliance/ system type	Location	Fuel type	performance	capacity	
No Whole of Home perform	ance assessment co	nducted for this certific	ate		

Hot water system

			Substitution to	lerance ranges	
		Minimum			
		efficiency/	Zone 3 STC	Zone 3 STC	Assessed daily
Appliance/ system type	Fuel type	performance	lower limit	upper limit	load

Pool/spa equipment

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

Onsite renewable energy schedule

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

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

Battery schedule

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

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

7.9 Star Rating as of 19 Feb 2024



Explanatory Notes

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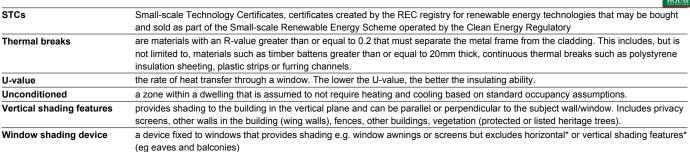
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EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilate corridor in a Class 2 building.
Exposure category – expose	d terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category –	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
suburban	
Exposure category –	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
protected	
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)	properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space and generally does not have a diffuser.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (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.
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.
5,	

BBLYSC23KO-03 NatHERS

7.9 Star Rating as of 19 Feb 2024



*Refer to glossary. Generated on 19 Feb 2024 using FirstRate5: 5.5.4 (3.22) for 14-17/35636, U 12, 1-7 Fergerson Avenue, Fairfield, NSW, 2165