

Nationwide House Energy Rating Scheme NatHERS Certificate No. 0006790950-01

Generated on 03 Dec 2021 using BERS Pro v4.4.0.6 (3.21)

Property

Address	Unit 3, 46 George Street , Mudgee , NSW , 2850
Lot/DP	9/37649
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Rev A Issue date : 14/10/21
Prepared by	Amoveo Modular Homes

Construction and environment

Assessed floor area (m ² *)	Exposure Type	
Conditioned*	56.0	Suburban
Unconditioned*	0.0	NatHERS climate zone
Total	56.0	65
Garage	0.0	



Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	jobs@certifiedenergy.com.au
Phone	1300 443 674
Accreditation No.	10056
Assessor Accrediting Organisation	HERA
Declaration of interest	None

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

6.2
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

204.3 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

Heating	Cooling
200.2 MJ/m ²	4.1 MJ/m ²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

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

When using either link, ensure you are visiting hstar.com.au



Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

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 level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

*The dwelling has been assessed without recessed light fittings as no lighting or electrical plan has been provided.

*Obscure glazing has been modelled as clear glass as it has similar thermal properties.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-003-01 A	n/a	1200	1450	n/a	45	N	No
Bedroom 1	ALM-003-01 A	n/a	1200	1450	n/a	45	N	No
ENS 1	ALM-003-01 A	n/a	1500	1200	n/a	90	E	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-003-01 A	n/a	2100	1200	n/a	30	N	No
Kitchen/Living	ALM-003-01 A	n/a	600	1800	n/a	45	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Anti-glare foil with bulk no gap R2	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	5295	N	2100	NO
Bedroom 1	EW-1	2700	2395	E	400	NO
ENS 1	EW-1	2700	2295	E	400	NO
ENS 1	EW-1	2700	5295	S	400	NO
Kitchen/Living	EW-1	2700	6795	N	2100	NO
Kitchen/Living	EW-1	2700	6795	S	400	NO
Kitchen/Living	EW-1	2700	4700	W	450	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		29.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended AAC (75mm) 75mm	14.80	Enclosed	No Insulation	Carpet 10mm
ENS 1	Suspended AAC (75mm) 75mm	9.30	Enclosed	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Suspended AAC (75mm) 75mm	31.70	Enclosed	No Insulation	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R2	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
No Data Available				

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.8	0.30	Light

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings 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, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area 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, rangehoods, 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.
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.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with 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 10m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the 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 .
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
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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.
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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0006790943

Generated on 15 Nov 2021 using BERS Pro v4.4.0.6 (3.21)

Property

Address	Unit 2, 46 George Street , Mudgee , NSW , 2850
Lot/DP	9/37649
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Rev A Issue date : 14/10/21
Prepared by	Amoveo Modular Homes

Construction and environment

Assessed floor area (m²)*	Exposure Type	
Conditioned*	157.0	Suburban
Unconditioned*	16.0	NatHERS climate zone
Total	173.0	65
Garage	0.0	



Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	jobs@certifiedenergy.com.au
Phone	1300 443 674
Accreditation No.	10056
Assessor Accrediting Organisation	HERA
Declaration of interest	None

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5.7
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ENERGY RATING SCHEME

236.3 MJ/m²
Predicted annual energy load for
heating and cooling based on standard
occupancy assumptions.

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Thermal performance

Heating	Cooling
223.6	12.7
MJ/m²	MJ/m²

About the rating

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Additional notes

*The dwelling has been assessed without recessed light fittings as no lighting or electrical plan has been provided.

*Obscure glazing has been modelled as clear glass as it has similar thermal properties.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bath	ALM-003-01 A	n/a	1200	850	n/a	90	E	No
Master Bedroom	ALM-003-01 A	n/a	1800	1800	n/a	30	W	No
ENS	ALM-003-01 A	n/a	600	1200	n/a	90	S	No
Bedroom 2	ALM-003-01 A	n/a	1800	720	n/a	45	S	No
Bedroom 2	ALM-003-01 A	n/a	1800	720	n/a	45	S	No
Bedroom 3	ALM-003-01 A	n/a	1200	1450	n/a	45	S	No
Bedroom 4	ALM-003-01 A	n/a	1200	1450	n/a	45	S	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	W	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	W	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	N	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Storage	2040	820	90	N
Corridor	2100	820	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Anti-glare foil with bulk no gap R2	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Storage	EW-1	3290	3195	E	400	NO
Storage	EW-1	3290	2995	N	400	YES
Bath	EW-1	3290	2290	E	400	NO
Master Bedroom	EW-1	3290	1200	N	8400	YES
Master Bedroom	EW-1	3290	3295	W	1000	NO
WIR	EW-1	3290	4195	S	400	NO
WIR	EW-1	3290	1595	W	200	NO
ENS	EW-1	3290	1200	E	400	YES
ENS	EW-1	3290	1595	S	400	NO
Bedroom 2	EW-1	3290	4990	S	400	YES
Bedroom 3	EW-1	3290	3590	S	400	NO
Bedroom 4	EW-1	3290	3295	E	400	NO
Bedroom 4	EW-1	3290	3695	S	400	NO
Corridor	EW-1	3290	1890	W	2200	YES
Kitchen/Living	EW-1	3290	2000	S	7200	YES
Kitchen/Living	EW-1	3290	4000	W	200	NO
Kitchen/Living	EW-1	3290	15900	N	400	NO
Kitchen/Living	EW-1	3290	800	E	400	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		233.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Storage	Suspended AAC (75mm) 75mm	9.30	Enclosed	No Insulation	Ceramic Tiles 8mm
Bath	Suspended AAC (75mm) 75mm	6.50	Enclosed	No Insulation	Ceramic Tiles 8mm
Master Bedroom	Suspended AAC (75mm) 75mm	13.40	Enclosed	No Insulation	Carpet 10mm
WIR	Suspended AAC (75mm) 75mm	6.50	Enclosed	No Insulation	Carpet 10mm
ENS	Suspended AAC (75mm) 75mm	5.10	Enclosed	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Suspended AAC (75mm) 75mm	16.00	Enclosed	No Insulation	Carpet 10mm
Bedroom 3	Suspended AAC (75mm) 75mm	10.90	Enclosed	No Insulation	Carpet 10mm
Bedroom 4	Suspended AAC (75mm) 75mm	11.10	Enclosed	No Insulation	Carpet 10mm
Powder	Suspended AAC (75mm) 75mm	2.00	Enclosed	No Insulation	Ceramic Tiles 8mm
Pantry	Suspended AAC (75mm) 75mm	2.00	Enclosed	No Insulation	Vinyl 3mm
Laundry	Suspended AAC (75mm) 75mm	3.60	Enclosed	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Suspended AAC (75mm) 75mm	9.50	Enclosed	No Insulation	Ceramic Tiles 8mm
Corridor	Suspended AAC (75mm) 75mm	10.50	Enclosed	No Insulation	Vinyl 3mm
Kitchen/Living	Suspended AAC (75mm) 75mm	62.80	Enclosed	No Insulation	Vinyl 3mm
Corridor 2	Suspended AAC (75mm) 75mm	3.70	Enclosed	No Insulation	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Storage	Plasterboard	Bulk Insulation R2	No
Bath	Plasterboard	Bulk Insulation R2	No
Master Bedroom	Plasterboard	Bulk Insulation R2	No
WIR	Plasterboard	Bulk Insulation R2	No
ENS	Plasterboard	Bulk Insulation R2	No
Bedroom 2	Plasterboard	Bulk Insulation R2	No
Bedroom 3	Plasterboard	Bulk Insulation R2	No
Bedroom 4	Plasterboard	Bulk Insulation R2	No
Powder	Plasterboard	Bulk Insulation R2	No
Pantry	Plasterboard	Bulk Insulation R2	No
Laundry	Plasterboard	Bulk Insulation R2	No
Kitchen/Living	Plasterboard	Bulk Insulation R2	No
Corridor	Plasterboard	Bulk Insulation R2	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R2	No
Corridor 2	Plasterboard	Bulk Insulation R2	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
No Data Available				

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.8	0.30	Light

Explanatory notes

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
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Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
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
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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.
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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0006790935

Generated on 15 Nov 2021 using BERS Pro v4.4.0.6 (3.21)

Property

Address	Unit 1, 46 George Street , Mudgee , NSW , 2850
Lot/DP	9/37649
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Rev A Issue date : 14/10/21
Prepared by	Amoveo Modular Homes

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	157.0	Suburban
Unconditioned*	16.0	NatHERS climate zone
Total	173.0	65
Garage	0.0	



Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	jobs@certifiedenergy.com.au
Phone	1300 443 674
Accreditation No.	10056
Assessor Accrediting Organisation	HERA
Declaration of interest	None

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

5.7
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

235.7 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

Heating	Cooling
225.7 MJ/m ²	10.0 MJ/m ²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

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

When using either link, ensure you are visiting hstar.com.au



Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

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 level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

*The dwelling has been assessed without recessed light fittings as no lighting or electrical plan has been provided.

*Obscure glazing has been modelled as clear glass as it has similar thermal properties.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bath	ALM-003-01 A	n/a	1200	850	n/a	90	W	No
Master Bedroom	ALM-003-01 A	n/a	1800	1800	n/a	30	E	No
ENS	ALM-003-01 A	n/a	600	1200	n/a	90	S	No
Bedroom 2	ALM-003-01 A	n/a	1800	720	n/a	45	S	No
Bedroom 2	ALM-003-01 A	n/a	1800	720	n/a	45	S	No
Bedroom 3	ALM-003-01 A	n/a	1200	1450	n/a	45	S	No
Bedroom 4	ALM-003-01 A	n/a	1200	1450	n/a	45	S	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-004-01 A	n/a	2100	3060	n/a	30	N	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	N	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	E	No
Kitchen/Living	ALM-003-01 A	n/a	1800	850	n/a	30	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Storage	2040	820	90	N
Corridor	2100	820	90	E

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Anti-glare foil with bulk no gap R2	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Storage	EW-1	3290	2995	N	3300	YES
Storage	EW-1	3290	3195	W	400	NO
Bath	EW-1	3290	2290	W	400	NO
Master Bedroom	EW-1	3290	3295	E	1000	NO
Master Bedroom	EW-1	3290	1200	N	6300	YES
WIR	EW-1	3290	1595	E	200	NO
WIR	EW-1	3290	4195	S	400	NO
ENS	EW-1	3290	1595	S	400	NO
ENS	EW-1	3290	1200	W	400	YES
Bedroom 2	EW-1	3290	4990	S	400	YES
Bedroom 3	EW-1	3290	3590	S	400	NO
Bedroom 4	EW-1	3290	3695	S	400	NO
Bedroom 4	EW-1	3290	3295	W	400	NO
Corridor	EW-1	3290	1890	E	2200	YES
Kitchen/Living	EW-1	3290	800	W	3400	YES
Kitchen/Living	EW-1	3290	15900	N	400	NO
Kitchen/Living	EW-1	3290	4000	E	200	NO
Kitchen/Living	EW-1	3290	2000	S	7200	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		233.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Storage	Suspended AAC (75mm) 75mm	9.30	Enclosed	No Insulation	Ceramic Tiles 8mm
Bath	Suspended AAC (75mm) 75mm	6.50	Enclosed	No Insulation	Ceramic Tiles 8mm
Master Bedroom	Suspended AAC (75mm) 75mm	13.40	Enclosed	No Insulation	Carpet 10mm
WIR	Suspended AAC (75mm) 75mm	6.50	Enclosed	No Insulation	Carpet 10mm
ENS	Suspended AAC (75mm) 75mm	5.10	Enclosed	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Suspended AAC (75mm) 75mm	16.00	Enclosed	No Insulation	Carpet 10mm
Bedroom 3	Suspended AAC (75mm) 75mm	10.90	Enclosed	No Insulation	Carpet 10mm
Bedroom 4	Suspended AAC (75mm) 75mm	11.10	Enclosed	No Insulation	Carpet 10mm
Powder	Suspended AAC (75mm) 75mm	2.00	Enclosed	No Insulation	Ceramic Tiles 8mm
Pantry	Suspended AAC (75mm) 75mm	2.00	Enclosed	No Insulation	Vinyl 3mm
Laundry	Suspended AAC (75mm) 75mm	3.60	Enclosed	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Suspended AAC (75mm) 75mm	9.50	Enclosed	No Insulation	Ceramic Tiles 8mm
Corridor	Suspended AAC (75mm) 75mm	10.50	Enclosed	No Insulation	Vinyl 3mm
Kitchen/Living	Suspended AAC (75mm) 75mm	62.80	Enclosed	No Insulation	Vinyl 3mm
Corridor 2	Suspended AAC (75mm) 75mm	3.70	Enclosed	No Insulation	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Storage	Plasterboard	Bulk Insulation R2	No
Bath	Plasterboard	Bulk Insulation R2	No
Master Bedroom	Plasterboard	Bulk Insulation R2	No
WIR	Plasterboard	Bulk Insulation R2	No
ENS	Plasterboard	Bulk Insulation R2	No
Bedroom 2	Plasterboard	Bulk Insulation R2	No
Bedroom 3	Plasterboard	Bulk Insulation R2	No
Bedroom 4	Plasterboard	Bulk Insulation R2	No
Powder	Plasterboard	Bulk Insulation R2	No
Pantry	Plasterboard	Bulk Insulation R2	No
Laundry	Plasterboard	Bulk Insulation R2	No
Kitchen/Living	Plasterboard	Bulk Insulation R2	No
Corridor	Plasterboard	Bulk Insulation R2	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R2	No
Corridor 2	Plasterboard	Bulk Insulation R2	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
No Data Available				

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.8	0.30	Light

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0006802210

Generated on 03 Dec 2021 using BERS Pro v4.4.0.6 (3.21)

Property

Address 46 George Street , Mudgee ,
NSW , 2850

Lot/DP 9/37649

NatHERS climate zone 65

Accredited assessor 

Jamie Bonnefin

Certified Energy

jobs@certifiedenergy.com.au

1300 443 674

Accreditation No. 10056

Assessor Accrediting Organisation HERA



Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=jxMEbRyRE .
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Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0006790935	1	225.7	10	235.7	5.7
0006790943	2	223.6	12.7	236.3	5.7
0006790950-01	3	200.2	4.1	204.3	6.2

National Construction Code (NCC) requirements

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Explanatory Notes

About this report

This is a summary of NCC Class 1 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

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