Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0008209360

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

65

Property

Address Winbourne St, Mudgee, NSW, 2850

Lot/DP 17-18/230349

NatHERS climate zone

Accredited assessor

marc kiho kiho building consulting energy_rating@bigpond.com 0400 680 815 Accreditation No. 20094 Assessor Accrediting Organisation



Verification

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

Summary of all dwellings

Unit Number	Heating load (MJ/m ² /p.a.) 199.9	Cooling load (MJ/m ² /p.a.) 3.5	Total load (MJ/m ² /p.a.) 203.3	Star rating 6.3
2	194.7	2.7	197.4	6.4
3	201.8	3.5	205.3	6.2
4	194.5	2.4	197	6.4
5	188.1	3.3	191.4	6.4
	Number 1 2 3 4	Number (MJ/m²/p.a.) 1 199.9 2 194.7 3 201.8 4 194.5	Number (MJ/m²/p.a.) (MJ/m²/p.a.) 1 199.9 3.5 2 194.7 2.7 3 201.8 3.5 4 194.5 2.4	Number (MJ/m²/p.a.) (MJ/m²/p.a.) (MJ/m²/p.a.) 1 199.9 3.5 203.3 2 194.7 2.7 197.4 3 201.8 3.5 205.3 4 194.5 2.4 197

ABSA

Continued Over

NATIONWIDE

ENERGY RATING SCHEME

(R)

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated buildings 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.



Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (MJ/m²/p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0008209355	6	191.2	2.7	193.9	6.4
0008209330	7	196.7	5.8	202.5	6.3
0008209348	8	199.6	2.2	201.8	6.3

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).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). 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.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

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Nationwide House Energy Rating Scheme NatHERS Certificate No. 0008209280

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

17-18/230349

Property

Address

Unit 1, Winbourne St , Mudgee , NSW , 2850

Lot/DP

Type

NCC Class

New Dwelling

1A

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)*Conditioned*57.0Unconditioned*26.0Total83.0Garage17.0

Exposure Type Suburban NatHERS climate zone

65

Accredited assessor

Name Business name Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

marc kiho

20094

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



203.3 MJ/m²

R

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	Coolin
199.9	3.5
MJ/m ²	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.

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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.

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
WINDOW ID	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
WINDOWID	Description	U-value*	31160	SHGC lower limit	SHGC upper limit	
No Data Availab	le					



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	2100	2400	n/a	45	E	No
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	S	No
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	S	No
Bedroom 1	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 2	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Day Time 1	TIM-001-01 W	n/a	800	900	n/a	90	W	No

Roof window type and performance

Default* roof windows

Window ID	Wind	ow	Maximum		SHCC*	Subst	Substitution tolerance ranges			
window ID	Desc	ription	U-va	U-value* SHGC*		SHGC low	ver limit	SHGC upper limit		
No Data Ava	ailable									
Custom* ro	of windows									
Window ID	Wind	ow	Maxi	mum	SHGC*	Subst	itution tole	rance ranges		
WINDOWID	Desc	ription	U-va	lue*	3660	SHGC low	ver limit	SHGC upper limit		
No Data Ava	ailable									
Roof w	Vindow S Window ID	Schedule Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoo shade	or Indoor shade		
No Data Ava	ailable									
Skyligh Skylight ID		nd perform	NANCE Skylight de	escription						
No Data Ava	ailable									
Skyligł	nt sched	ule								
Location	Skylight	Skylight	Skylight shaft length	Area Orie	ntation	Outdoor	iffuser	Skylight shaft		



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	W
Day Time 1	1200	920	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3800	S	2200	YES
Garage 1	EW-1	2700	3000	W	600	NO
Kitchen/Living	EW-2	2700	3800	E	600	YES
Kitchen/Living	EW-2	2700	2400	Ν	600	YES
Kitchen/Living	EW-2	2700	3600	E	3000	NO
Kitchen/Living	EW-2	2700	3595	S	600	NO
Bedroom 1	EW-2	2700	3795	S	600	NO
Bedroom 1	EW-2	2700	3195	W	600	NO
Bedroom 2	EW-2	2700	3790	S	600	NO
Day Time 1	EW-2	2700	1190	W	2200	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		34.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5
IW-3 - Cavity wall, direct fix plasterboard, single gap		43.00	No insulation

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.20 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	26.30 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	11.40 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation ion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	8.20 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	on Quantity Type D		Diameter (mm ²)	Sealed/unsealed	
Kitchen/Living	1	Exhaust Fans	100	Sealed	
Unconditioned 1	1	Exhaust Fans	300	Sealed	

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	Medium



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

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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 softw are 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.						
Account 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						
Assessed floor area	design documents.						
Colling popotrotions	features that require a penetration to the ceiling, including dow nlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes						
Ceiling penetrations	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						
Conditioned	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)						
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).						
	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmand with scattered						
Exposure category – open	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	the NOC groups buildings by their function and use, and assigns a classification code. NatHERS software models NOC Class 1, 2 or 4						
(NOC) Class	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.						
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional						
Provisional value	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 know n 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						
Rooi Willdow	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 boot goin coofficient (SUCC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released						
Solar heat gain coefficient (SHGC)	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 know n 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.						
Vortical chading factures	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy						
Vertical shading features	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. 0008209298

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address

Unit 2, Winbourne St , Mudgee , NSW , 2850

Lot/DP

Type

NCC Class

1A

17-18/230349

New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)*Conditioned*60.0Unconditioned*25.0Total86.0Garage17.0

Suburban NatHERS climate zone

Exposure Type

Accredited assessor

Name Business name Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

marc kiho

20094

Accreditation No.

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



197.4 MJ/m²

R

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

leating	Co
94.7	2.7
/IJ/m ²	MJ

Cooling 2.7

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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".

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
WINdow ID	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit	
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
WINDOWID	Description	U-value*	31160	SHGC lower limit	SHGC upper limit	
No Data Availab	le					



Window and glazed door schedule

Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
ALM-004-03 A	n/a	900	2100	n/a	45	E	No
ALM-004-03 A	n/a	2100	1800	n/a	45	Ν	No
ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
TIM-001-01 W	n/a	800	900	n/a	90	W	No
	ID ALM-003-03 A ALM-003-03 A ALM-004-03 A ALM-004-03 A ALM-004-03 A ALM-003-03 A ALM-003-03 A ALM-003-03 A ALM-003-03 A	ID no. ALM-003-03 A n/a ALM-003-03 A n/a ALM-004-03 A n/a ALM-003-03 A n/a	ID no. (mm) ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-004-03 A n/a 900 ALM-004-03 A n/a 2100 ALM-004-03 A n/a 1200 ALM-004-03 A n/a 1200 ALM-004-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 900 ALM-003-03 A n/a 900	ID no. (mm) (mm) ALM-003-03 A n/a 1800 900 ALM-003-03 A n/a 1800 900 ALM-003-03 A n/a 1800 900 ALM-004-03 A n/a 900 2100 ALM-004-03 A n/a 2100 1800 ALM-004-03 A n/a 1200 1500 ALM-004-03 A n/a 900 1500 ALM-003-03 A n/a 1800 700 ALM-003-03 A n/a 1800 700	ID no. (mm) (mm) type ALM-003-03 A n/a 1800 900 n/a ALM-004-03 A n/a 2100 1800 n/a ALM-004-03 A n/a 1200 1500 n/a ALM-004-03 A n/a 900 1500 n/a ALM-004-03 A n/a 1800 700 n/a ALM-004-03 A n/a 1800 700 n/a ALM-003-03 A n/a 1800 700 n/a ALM-004-03 A n/a 900 1500 n/a	ID no. (mm) (mm) type % ALM-003-03 A n/a 1800 900 n/a 90 ALM-003-03 A n/a 1800 900 n/a 90 ALM-003-03 A n/a 1800 900 n/a 90 ALM-004-03 A n/a 1800 900 n/a 45 ALM-004-03 A n/a 2100 1800 n/a 45 ALM-004-03 A n/a 1200 1500 n/a 45 ALM-004-03 A n/a 900 1500 n/a 45 ALM-004-03 A n/a 1200 1500 n/a 45 ALM-004-03 A n/a 900 1500 n/a 90 ALM-003-03 A n/a 1800 700 n/a 90 ALM-003-03 A n/a 1800 700 n/a 90 ALM-003-03 A n/a 1800 700 n/a 90 ALM-003-03 A <	ID no. (mm) (mm) type % Orientation ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-004-03 A n/a 900 2100 n/a 45 E ALM-004-03 A n/a 2100 1800 n/a 45 N ALM-004-03 A n/a 1200 1500 n/a 45 N ALM-004-03 A n/a 900 1500 n/a 45 N ALM-004-03 A n/a 900 1500 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 90

Roof window type and performance

Default* roof windows

Window ID	Windov	Window		Maximum		Substitution tolerance ranges			
window ID	dow ID Description U-value*		SHGC*	SHGC lower limit SH		SHGC upper limit			
No Data Ava	ilable								
Custom* roc	of windows								
Window ID	Windov	v	Maxim	Maximum		Substitu	Substitution tolerance range		
	D Description U-value*		ue*	SHGC*	SHGC lower	r limit	SHGC upper limit		
No Data Ava	ilable								
Roof w	ilable indow SC Window ID	chedule Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdo		
Roof w	indow SC Window ID	Window				Orientation			
Location No Data Ava	indow so Window ID	Window	%			Orientation			

No Data Available

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²) Or	rientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Av	ailable							



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	W
Day Time 1	1200	920	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	2995	W	600	NO
Kitchen/Living	EW-2	2700	3595	Ν	600	NO
Kitchen/Living	EW-2	2700	3200	E	3400	YES
Kitchen/Living	EW-2	2700	2800	Ν	3800	YES
Kitchen/Living	EW-2	2700	4200	E	600	NO
Bedroom 1	EW-2	2700	3795	Ν	600	NO
Bedroom 1	EW-2	2700	1400	S	2200	YES
Bedroom 1	EW-2	2700	3000	W	600	NO
Bedroom 2	EW-2	2700	3790	Ν	600	NO
Day Time 1	EW-2	2700	1390	W	2600	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		39.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		44.00	No insulation
IW-3 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.00 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	30.70 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	10.80 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation tion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	7.60 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	100	Sealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	Medium



Explanatory notes

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
, and a onergy roug	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
Assessed floor area	design documents.
O liter and the first	features that require a penetration to the ceiling, including dow nlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes
Ceiling penetrations	fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it
Conditioned	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).
	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered
Exposure category - open	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 me.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 NOC groups buildings by their function and use, and assigns a classification code. NatHERS software models NOC Class 1, 2 or 4
(NOC) Class	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.
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional
Provisional value	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 NathEPS 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.
Color hast usin as officiant (CLCC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released
Solar heat gain coefficient (SHGC)	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 know n 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.
Vortical chading fortures	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy
Vertical shading features	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. 0008209306

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address

Unit 3, Winbourne St, Mudgee, NSW, 2850

Lot/DP

Type

NCC Class

17-18/230349 1A

New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)*Conditioned*57.0Unconditioned*26.0Total83.0Garage17.0

CCREDIA

Accredited assessor

Name Business name Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

20094

marc kiho

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts

Exposure Type

NatHERS climate zone

Suburban

65

The more stars the more energy efficient NATIONWIDE HOUSE ENERGY RATING SCHEME

205.3 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	Co
201.8	3.5
MJ/m ²	MJ

Cooling 3.5 //J/m² R

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

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.



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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Mindow ID Window Maximum SHGC*	SHCC*	Substitution tolerance ranges		
window iD	Description	U-value*	3660	SHGC lower limit	SHGC upper limit
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59

Custom* windows

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



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	2100	2400	n/a	45	E	No
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	S	No
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	S	No
Bedroom 1	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 2	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Day Time 1	TIM-001-01 W	n/a	800	900	n/a	90	W	No
-								

Roof window type and performance

Default* roof windows

No Data Available

Window ID	Windo	Window Maximum succ		SHCC*	Sub	Substitution tolerance ranges		
WINDOWID	Desc	ription	U-va	U-value* SHGC*		SHGC lo	wer limit	SHGC upper limit
No Data Ava	ailable							
Custom* roo	of windows							
Window ID	Windo	W	Maxin	num	SHGC*	Sub	stitution to	erance ranges
	Desc	ription	U-va	lue*	31160	SHGC lo	wer limit	SHGC upper limit
No Data Ava	ailable							
Roof w	vindow s	schedule						
Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outde shade	
No Data Ava	ailable							
Skyligh	nt type a	nd perforr	nance					
Skylight ID			Skylight de	scription				
No Data Ava	ailable							
Skyligh	nt sched	ule						
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²) Orie	ntation	Outdoor shade	Diffuser	Skylight shaft reflectance

(mm)



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation	
Garage 1	2040	2400	90	W	
Day Time 1	1200	920	90	W	

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3800	S	2200	YES
Garage 1	EW-1	2700	3000	W	600	NO
Kitchen/Living	EW-2	2700	3800	E	600	YES
Kitchen/Living	EW-2	2700	2400	Ν	600	YES
Kitchen/Living	EW-2	2700	3600	E	3000	NO
Kitchen/Living	EW-2	2700	3595	S	600	NO
Bedroom 1	EW-2	2700	3795	S	600	NO
Bedroom 1	EW-2	2700	3195	W	600	NO
Bedroom 2	EW-2	2700	3790	S	600	NO
Day Time 1	EW-2	2700	1190	W	2200	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		34.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5
IW-3 - Cavity wall, direct fix plasterboard, single gap		43.00	No insulation

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.20 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	26.30 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	11.40 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation ion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	8.20 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	100	Sealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.30	Light



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	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered
Exposure category – open	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	the NOC groups buildings by their function and use, and assigns a classification code. NatHERS software models NOC Class 1, 2 or 4
(NOC) Class	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.
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional
Provisional value	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.
	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released
Solar heat gain coefficient (SHGC)	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 know n 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 abading factures	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy
Vertical shading features	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. 0008209314

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address

Unit 4, Winbourne St, Mudgee, NSW 2850

Lot/DP

17-18/230349 NCC Class^{*} 1A

Type

Plans

Main Plan

Prepared by

Winbourne St Housing Plus / PIE

New Dwelling

Construction and environment

Assessed floor area (m²)* 60.0 Conditioned* Unconditioned* 25.0 Total 86.0 17.0 Garage

Suburban NatHERS climate zone 65

Exposure Type

ccredited assessor

Name **Business name** Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

marc kiho

20094

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



197.0 MJ/m²

R

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

leating	Cooling
94.5	2.4
/JJ/m ²	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

visiting hstar.com.au

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



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.



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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
window iD	Description U-value*	SHGC lower limit	SHGC upper limit			
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

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



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
Kitchen/Living	ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	900	2100	n/a	45	E	No
Kitchen/Living	ALM-004-03 A	n/a	2100	1800	n/a	45	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
Bedroom 1	ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 2	ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
Day Time 1	TIM-001-01 W	n/a	800	900	n/a	90	W	No

Roof window type and performance

Default* roof windows

Window ID Window		Maximum SHGC*		Subst	erance ranges			
window ID	Description U-value*		SHGC	SHGC low	ver limit	SHGC upper limit		
No Data Ava	ailable							
Custom* ro	of windows							
Window ID	Winde	÷ · · ·	Maxii	mum	SHGC*	Subst	itution tole	erance ranges
WINGOW ID	Desc	ription	U-va	lue*	51100	SHGC low	ver limit	SHGC upper limit
No Data Ava	ailable							
KOOT W	Window ID	Schedule Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdo shade	
No Data Ava	ailable							
Skyligh Skylight ID	nt type a	nd perforn	NANCE Skylight de	escription				
No Data Ava	ailable							
Skyligh	nt sched	ule						
Location	Skylight	Skylight	Skylight shaft length	Area Orie	ntation	Outdoor	iffuser	Skylight shaft

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Ava	ailable							



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	W
Day Time 1	1200	920	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	2995	W	600	NO
Kitchen/Living	EW-2	2700	3595	Ν	600	NO
Kitchen/Living	EW-2	2700	3200	E	3400	YES
Kitchen/Living	EW-2	2700	2800	Ν	3800	YES
Kitchen/Living	EW-2	2700	4200	E	600	NO
Bedroom 1	EW-2	2700	3795	Ν	600	NO
Bedroom 1	EW-2	2700	1400	S	2200	YES
Bedroom 1	EW-2	2700	3000	W	600	NO
Bedroom 2	EW-2	2700	3790	Ν	600	NO
Day Time 1	EW-2	2700	1390	W	2600	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		39.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		44.00	No insulation
IW-3 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.00 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	30.70 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	10.80 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation tion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	7.60 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	100	Sealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	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

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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 softw are 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 dow nlights, 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
Conditioned	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).
	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered
Exposure category – open	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	the NOC groups buildings by their function and use, and assigns a classification code. NatHERS software models NOC Class 1, 2 or 4
(NOC) Class	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.
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional
Provisional value	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.
	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released
Solar heat gain coefficient (SHGC)	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 know n 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 abading factures	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy
Vertical shading features	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. 0008209322

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address

Unit 5, Winbourne St , Mudgee , NSW , 2850

Lot/DP

Type

NCC Class

17-18/230349 1A

New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)*Conditioned*57.0Unconditioned*26.0Total83.0Garage17.0

Suburban NatHERS climate zone

Exposure Type

Accredited assessor

Name Business name Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

marc kiho

20094

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



191.4 MJ/m²

R

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

leating	Cooling
188.1	3.3
/J/m ²	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=eEWwsamCE. When using either link, ensure you are visiting hstar.com.au

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.



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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	Substitution tolerance ranges		
		U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

Window ID	Window	Maximum	SHGC*	Substitution to	Substitution tolerance ranges		
WINDOW ID	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit		
No Data Availab	le						



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
Kitchen/Living	ALM-004-03 A	n/a	1200	1500	n/a	45	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	2100	2400	n/a	45	E	No
Bedroom 1	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 1	ALM-003-03 A	n/a	1800	900	n/a	90	W	No
Bedroom 2	ALM-004-03 A	n/a	600	1500	n/a	45	S	No
Day Time 1	TIM-001-01 W	n/a	800	900	n/a	90	W	No

Roof window type and performance

Default* roof windows

Window ID	Window		Maxim	Maximum		Substitution tolerance ranges			
window ID	Descrip	otion	U-val	U-value*		SHGC lowe	er limit	SHG	C upper limit
No Data Avail	lable								
Custom* roof	fwindows								
Window ID	Windov	v	Maxim	um	SHGC*	Substit	tution to	lerance	e ranges
	Descrip	otion	U-value*		31100	SHGC lowe	er limit	SHG	C upper limit
No Data Avail	lable								
Roof wi	ndow so	chedule							
Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outd shad		Indoor shade

Skylight ID			Skylight d	Skylight description				
No Data Available								
Skylig	Skylight schedule							
Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance

No Data Available



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	W
Day Time 1	1200	920	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3800	S	2200	YES
Garage 1	EW-1	2700	3000	W	600	NO
Kitchen/Living	EW-2	2700	3800	E	600	YES
Kitchen/Living	EW-2	2700	2400	Ν	600	YES
Kitchen/Living	EW-2	2700	3600	E	3000	NO
Kitchen/Living	EW-2	2700	3595	S	600	NO
Bedroom 1	EW-2	2700	3795	S	600	NO
Bedroom 1	EW-2	2700	3195	W	600	NO
Bedroom 2	EW-2	2700	3790	S	600	NO
Day Time 1	EW-2	2700	1190	W	2200	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		34.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5
IW-3 - Cavity wall, direct fix plasterboard, single gap		43.00	No insulation

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.20 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	26.30 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	11.40 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation ion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	8.20 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	100	Sealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	Medium



Explanatory notes

About this report

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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.

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Assessed floor area	design documents.
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(NOC) Class	buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional
Provisional value	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 know n 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
Rooi Willdow	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.
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Solar boot goin coofficient (SUCC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released
Solar heat gain coefficient (SHGC)	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 know n 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.
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Vortical chading fosturas	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy
Vertical shading features	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. 0008209355

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

17-18/230349

Property

Address

Unit 6, Winbourne St, Mudgee, NSW 2850

Lot/DP

Type

NCC Class^{*}

1A New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)* 60.0 Conditioned* Unconditioned* 25.0 Total 86.0 17.0 Garage

Suburban NatHERS climate zone 65

Exposure Type

ccredited assessor

Name **Business name** Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

marc kiho

20094

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



193.9 MJ/m²

R

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

leating	Co
91.2	2.
/IJ/m ²	M

ooling J/m

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=AcvuRHFAU.

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

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.



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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window	Maximum		Substitution tolerance ranges		
WINdow ID	Description	cription U-value* SHGC*		SHGC lower limit	SHGC upper limit	
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	ID Description	U-value*	3000	SHGC lower limit	SHGC upper limit	
No Data Availab	le					



Window and glazed door schedule

Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
ALM-003-03 A	n/a	1800	900	n/a	90	Ν	No
ALM-004-03 A	n/a	900	2100	n/a	45	E	No
ALM-004-03 A	n/a	2100	1800	n/a	45	Ν	No
ALM-004-03 A	n/a	1200	1500	n/a	45	E	No
ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-003-03 A	n/a	1800	700	n/a	90	W	No
ALM-004-03 A	n/a	900	1500	n/a	45	Ν	No
TIM-001-01 W	n/a	800	900	n/a	90	W	No
	ID ALM-003-03 A ALM-003-03 A ALM-004-03 A ALM-004-03 A ALM-004-03 A ALM-003-03 A ALM-003-03 A ALM-003-03 A ALM-003-03 A	ID no. ALM-003-03 A n/a ALM-003-03 A n/a ALM-004-03 A n/a ALM-003-03 A n/a	ID no. (mm) ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-004-03 A n/a 900 ALM-004-03 A n/a 2100 ALM-004-03 A n/a 1200 ALM-004-03 A n/a 1200 ALM-004-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 1800 ALM-003-03 A n/a 900	ID no. (mm) (mm) ALM-003-03 A n/a 1800 900 ALM-003-03 A n/a 1800 900 ALM-003-03 A n/a 1800 900 ALM-004-03 A n/a 900 2100 ALM-004-03 A n/a 2100 1800 ALM-004-03 A n/a 1200 1500 ALM-004-03 A n/a 900 1500 ALM-003-03 A n/a 1800 700 ALM-003-03 A n/a 1800 700	ID no. (mm) (mm) type ALM-003-03 A n/a 1800 900 n/a ALM-003-03 A n/a 1800 900 n/a ALM-003-03 A n/a 1800 900 n/a ALM-004-03 A n/a 900 2100 n/a ALM-004-03 A n/a 2100 1800 n/a ALM-004-03 A n/a 1200 1500 n/a ALM-004-03 A n/a 900 1500 n/a ALM-004-03 A n/a 1800 700 n/a ALM-003-03 A n/a 1800 700 n/a	ID no. (mm) (mm) type % ALM-003-03 A n/a 1800 900 n/a 90 ALM-003-03 A n/a 1800 900 n/a 90 ALM-003-03 A n/a 1800 900 n/a 90 ALM-004-03 A n/a 1800 900 n/a 45 ALM-004-03 A n/a 2100 1800 n/a 45 ALM-004-03 A n/a 1200 1500 n/a 45 ALM-004-03 A n/a 900 1500 n/a 45 ALM-004-03 A n/a 1800 700 n/a 90 ALM-003-03 A <t< td=""><td>ID no. (mm) (mm) type % Orientation ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-004-03 A n/a 900 2100 n/a 45 E ALM-004-03 A n/a 2100 1800 n/a 45 N ALM-004-03 A n/a 1200 1500 n/a 45 N ALM-004-03 A n/a 1200 1500 n/a 45 N ALM-004-03 A n/a 900 1500 n/a 45 N ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 9</td></t<>	ID no. (mm) (mm) type % Orientation ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-003-03 A n/a 1800 900 n/a 90 N ALM-004-03 A n/a 900 2100 n/a 45 E ALM-004-03 A n/a 2100 1800 n/a 45 N ALM-004-03 A n/a 1200 1500 n/a 45 N ALM-004-03 A n/a 1200 1500 n/a 45 N ALM-004-03 A n/a 900 1500 n/a 45 N ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 90 W ALM-003-03 A n/a 1800 700 n/a 9

Roof window type and performance

Default* roof windows

Mindau	Window Maximum SHGC*		Substi	Substitution tolerance ranges				
Window ID	Descrip	otion	U-valu	U-value*		SHGC lowe	er limit	SHGC upper limit
No Data Ava	ilable							
Custom* roo	of windows							
Window ID	Windov	•	Maxim	um	SHGC*	Substi	itution tol	erance ranges
WINGOW ID	Descrip	otion	U-value*		51100	SHGC lowe	er limit	SHGC upper limit
No Data Ava	iilable							
	illable indow SC Window ID	chedule Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdo	
Roof w	indow SC Window ID	Window				Orientation		
Roof w Location No Data Ava	indow SC Window ID	Window	%			Orientation		

No Data Available

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²) Or	rientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Av	ailable							



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	W
Day Time 1	1200	920	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	2995	W	600	NO
Kitchen/Living	EW-2	2700	3595	Ν	600	NO
Kitchen/Living	EW-2	2700	3200	E	3400	YES
Kitchen/Living	EW-2	2700	2800	Ν	3800	YES
Kitchen/Living	EW-2	2700	4200	E	600	NO
Bedroom 1	EW-2	2700	3795	Ν	600	NO
Bedroom 1	EW-2	2700	1400	S	2200	YES
Bedroom 1	EW-2	2700	3000	W	600	NO
Bedroom 2	EW-2	2700	3790	Ν	600	NO
Day Time 1	EW-2	2700	1390	W	2600	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		39.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		44.00	No insulation
IW-3 - Double stud with plasterboard		34.00	Bulk Insulation in the centre R2.5

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	17.00 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	30.70 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	10.80 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Bedroom 2	Waffle pod slab 225 mm 100mm	11.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction		or Added insulation ion (R-value)	Covering
Unconditioned 1	Waffle pod slab 225 mm 100mm	8.30 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	7.60 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
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Nationwide House Energy Rating Scheme NatHERS Certificate No. 0008209330

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address

Unit 7, Winbourne St, Mudgee, NSW 2850

Lot/DP

Type

NCC Class^{*}

17-18/230349 1A

New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)* 66.0 Conditioned* Unconditioned*

Total Garage 26.0 92.0 19.0

ccredited assessor

Name **Business name** Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com

0400 680 815

20094

marc kiho

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts

Exposure Type

NatHERS climate zone

Suburban

65



202.5 MJ/m²

R

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

leating	Cooling
96.7	5.8
/JJ/m ²	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=IVcleuNmt. When using either link, ensure you are visiting hstar.com.au

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.



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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum	SHGC*	Substitution tolerance ranges		
		U-value*	3660	SHGC lower limit	SHGC upper limit	
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.53	0.50	0.56	
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain Iow-E -Clear	4.3	0.47	0.45	0.49	
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59	

Custom* windows

Window ID	Window	Maximum	SHGC*	Substitution tolerance ranges		
	Description	U-value*	3000	SHGC lower limit	SHGC upper limit	
No Data Availab	le					



Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-03 A	n/a	2100	2100	n/a	45	S	No
Kitchen/Living	ALM-004-03 A	n/a	1900	1200	n/a	45	W	No
Kitchen/Living	ALM-004-03 A	n/a	2100	2100	n/a	45	W	No
Kitchen/Living	ALM-003-03 A	n/a	1900	600	n/a	75	W	No
Kitchen/Living	ALM-003-03 A	n/a	1900	600	n/a	75	W	No
Kitchen/Living	TIM-001-01 W	n/a	800	900	n/a	90	Ν	No
Kitchen/Living	ALM-004-03 A	n/a	1900	1900	n/a	35	Ν	No
Bedroom 1	ALM-004-03 A	n/a	900	2100	n/a	45	S	No
Bedroom 2	ALM-004-03 A	n/a	900	2100	n/a	45	S	No
Unconditioned 1	ALM-004-03 A	n/a	900	900	n/a	45	Ν	No

Roof window type and performance

Default* roof windows

Window ID No Data Availal Custom* roof v Window ID	windows Windo Descri	w	U-va Maxir U-va	num	SHGC*	SHGC lov		SHGC upper limit
Custom* roof v Window ID	windows Windo Descri					Subs	4.4.4	
Window ID	Windo Descri					Subs	41441	
	Descri					Subs	Ald. Al	
No Data Availal		ption	U-va	L	SHGC*	5005	stitution tole	rance ranges
No Doto Availa	able			ue*		SHGC lov	wer limit	SHGC upper limit
NO Data Avalla								
Location No Data Availa	Window ID able	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoo shade	or Indoor shade
Skylight	type ar	nd perfori	nance			_		
Skylight ID			Skylight de	escription				
No Data Availal	able							
Skylight	schedu	ıle						
	Skylight	Skylight	Skylight shaft length	Area .	ntation	Outdoor _	Diffuser	Skylight shaft

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²) Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Av	ailable						



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	Ν
Kitchen/Living	1200	920	90	Ν

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	3195	Ν	600	NO
Kitchen/Living	EW-2	2700	1000	E	6000	YES
Kitchen/Living	EW-2	2700	2600	S	3800	YES
Kitchen/Living	EW-2	2700	4600	W	600	YES
Kitchen/Living	EW-2	2700	600	S	8400	YES
Kitchen/Living	EW-2	2700	2600	W	0	NO
Kitchen/Living	EW-2	2700	5600	Ν	600	NO
Bedroom 1	EW-2	2700	3795	S	600	NO
Bedroom 2	EW-2	2700	3795	S	600	NO
Bedroom 2	EW-2	2700	3195	W	3200	YES
Unconditioned 1	EW-2	2700	1990	Ν	600	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Double stud with plasterboard		25.00	Bulk Insulation in the centre R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		56.00	No insulation
IW-3 - Cavity wall, direct fix plasterboard, single gap		16.00	Bulk Insulation, No Air Gap R2.5

Floor type

Location	Construction	Area Sub-floor (m²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	18.80 None	Waffle Pod 225mm	Bare
Kitchen/Living	Waffle pod slab 225 mm 100mm	37.20 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	11.80 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm



Location	Construction	Area Sub-floor (m) ventilation	Added insulation (R-value)	Covering
Bedroom 2	Waffle pod slab 225 mm 100mm	11.10 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Unconditioned 1	Waffle pod slab 225 mm 100mm	7.20 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	5.70 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm²)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	100	Sealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)	
No Data Available			
Roof type			
Construction	Added insulation (R-value)	Solar absorptance	Roof shade

Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	Medium



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

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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 softw are 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.
Account 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
Assessed floor area	design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including dow nlights, 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
Conditioned	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).
	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmand with scattered
Exposure category – open	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	the NOC groups buildings by their function and use, and assigns a classification code. NatHERS software models NOC Class 1, 2 or 4
(NOC) Class	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.
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional
Provisional value	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 know n 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
Rooi Willdow	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 boot goin coofficient (SUCC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released
Solar heat gain coefficient (SHGC)	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 know n 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.
Vortical chading fosturas	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy
Vertical shading features	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. 0008209348

Generated on 14 Nov 2022 using BERS Pro v4.4.1.5 (3.21)

17-18/230349

Property

Address

Unit 8, Winbourne St , Mudgee , NSW , 2850

Lot/DP

Type

NCC Class

1A New Dwelling

Plans

Main Plan Prepared by

Winbourne St Housing Plus / PIE

Construction and environment

Assessed floor area (m²)*Conditioned*56.0Unconditioned*26.0Total82.0Garage19.0

20

marc kiho

20094

Exposure Type

NatHERS climate zone

Suburban

65



Accredited assessor

Name Business name Email Phone Accreditation No.

kiho building consulting energy_rating@bigpond.com 0400 680 815

Assessor Accrediting Organisation

ABSA

Declaration of interest

Declaration completed: no conflicts



201.8 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

leating	Co
99.6	2.2
/JJ/m ²	M

Cooling 2.2 /J/m² R

About the rating

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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?

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Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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.

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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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Maximum SHGC*		Substitution tolerance ranges		
window ID	Description	U-value*	SHGC	SHGC lower limit	SHGC upper limit
ALM-003-03 A	ALM-003-03 A Aluminium A DG Air Fill High Solar Gain low-E -Clear	4.3	0.47	0.45	0.49
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56	0.53	0.59
ALM-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.3	0.53	0.50	0.56
Custom* window	VS				
Window ID	Window	Maximum	SHCC*	Substitution to	lerance ranges
WINDOW ID	Description	U-value*	SHGC*	SHGC lower limit	SHGC upper limit

No Data Available



Window and glazed door schedule

Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
ALM-003-03 A	n/a	1900	900	n/a	75	Ν	No
TIM-001-01 W	n/a	800	900	n/a	90	Ν	No
ALM-003-03 A	n/a	1900	900	n/a	75	E	No
ALM-004-03 A	n/a	2100	1600	n/a	45	E	No
ALM-004-03 A	n/a	2100	1800	n/a	45	S	No
ALM-003-03 A	n/a	1900	900	n/a	75	S	No
ALM-004-03 A	n/a	900	2100	n/a	45	S	No
ALM-004-03 A	n/a	900	900	n/a	45	Ν	No
	ID ALM-003-03 A TIM-001-01 W ALM-003-03 A ALM-004-03 A ALM-004-03 A ALM-003-03 A ALM-004-03 A	ID no. ALM-003-03 A n/a TIM-001-01 W n/a ALM-003-03 A n/a ALM-004-03 A n/a ALM-004-03 A n/a ALM-003-03 A n/a ALM-004-03 A n/a ALM-004-03 A n/a ALM-003-03 A n/a	ID no. (mm) ALM-003-03 A n/a 1900 TIM-001-01 W n/a 800 ALM-003-03 A n/a 1900 ALM-003-03 A n/a 2100 ALM-004-03 A n/a 2100 ALM-003-03 A n/a 1900 ALM-004-03 A n/a 900	ID no. (mm) (mm) ALM-003-03 A n/a 1900 900 TIM-001-01 W n/a 800 900 ALM-003-03 A n/a 1900 900 ALM-003-03 A n/a 1900 900 ALM-003-03 A n/a 1900 900 ALM-004-03 A n/a 2100 1600 ALM-004-03 A n/a 1900 900 ALM-004-03 A n/a 2100 1800 ALM-003-03 A n/a 1900 900 ALM-004-03 A n/a 1900 2100	ID no. (mm) (mm) type ALM-003-03 A n/a 1900 900 n/a TIM-001-01 W n/a 800 900 n/a ALM-003-03 A n/a 1900 900 n/a ALM-001-01 W n/a 800 900 n/a ALM-003-03 A n/a 1900 900 n/a ALM-004-03 A n/a 2100 1600 n/a ALM-004-03 A n/a 2100 1800 n/a ALM-004-03 A n/a 1900 900 n/a ALM-004-03 A n/a 1900 900 n/a ALM-004-03 A n/a 1900 900 n/a	ID no. (mm) (mm) type % ALM-003-03 A n/a 1900 900 n/a 75 TIM-001-01 W n/a 800 900 n/a 90 ALM-003-03 A n/a 1900 900 n/a 90 ALM-003-03 A n/a 1900 900 n/a 75 ALM-003-03 A n/a 2100 1600 n/a 45 ALM-004-03 A n/a 2100 1800 n/a 45 ALM-004-03 A n/a 1900 900 n/a 45 ALM-004-03 A n/a 1900 900 n/a 45 ALM-004-03 A n/a 1900 900 n/a 45 ALM-004-03 A n/a 900 2100 n/a 45	ID no. (mm) (mm) type % Orientation ALM-003-03 A n/a 1900 900 n/a 75 N TIM-001-01 W n/a 800 900 n/a 90 N ALM-003-03 A n/a 1900 900 n/a 90 N ALM-003-03 A n/a 1900 900 n/a 75 E ALM-003-03 A n/a 2100 1600 n/a 45 E ALM-004-03 A n/a 2100 1800 n/a 45 S ALM-004-03 A n/a 1900 900 n/a 5 S ALM-004-03 A n/a 1900 900 n/a 45 S ALM-004-03 A n/a 900 2100 n/a 45 S

Roof window type and performance

Default* roof windows

U-valı	ie*	SHGC*	SHGC lowe	er limit	SHGC upper limit
Maxim	um	SHCC*	Substi	tution tole	rance ranges
U-valu	U-value*		SHGC lowe	er limit	SHGC upper limit
	Height	Width		Quitdoo	or Indoor
%	(mm)	(mm)	Orientation	shade	shade
rmance					
Skylight des	cription				
	U-valu v Opening %	v Opening Height % (mm)	U-value* SHGC*	U-value* SHGC* SHGC lowe Opening Height Width Orientation % (mm) (mm)	U-value* SHGC* SHGC lower limit Opening Height Width Orientation Outdoor % (mm) (mm) Orientation Shade

Area

 (m^{2})

Orientation

shaft length

(mm)

Outdoor

shade

Diffuser

No Data Available

Location

Skylight

ID

Skylight

No.

Skylight shaft

reflectance



External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	2400	90	Ν
Kitchen/Living	1200	920	90	Ν

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	No insulation	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	2700	2400	W	600	NO
Garage 1	EW-1	2700	3195	Ν	600	NO
Kitchen/Living	EW-2	2700	1000	W	5800	YES
Kitchen/Living	EW-2	2700	2200	Ν	2200	NO
Kitchen/Living	EW-2	2700	2400	E	600	YES
Kitchen/Living	EW-2	2700	600	Ν	4600	YES
Kitchen/Living	EW-2	2700	2600	E	0	NO
Kitchen/Living	EW-2	2700	600	S	8400	YES
Kitchen/Living	EW-2	2700	6200	E	600	YES
Kitchen/Living	EW-2	2700	4195	S	2200	YES
Bedroom 1	EW-2	2700	1600	E	4800	YES
Bedroom 1	EW-2	2700	3200	S	600	NO
Unconditioned 1	EW-2	2700	1990	Ν	600	YES

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		33.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		30.00	Bulk Insulation, No Air Gap R2.5
IW-3 - Double stud with plasterboard		25.00	Bulk Insulation in the centre R2.5

Floor type

Location	Construction	Area Sub-floor (m ²) ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	18.80 None	Waffle Pod 225mm	Bare

6.3 Star Rating as of 14 Nov 2022



Location	Construction	Area Sub-floor (m) ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Waffle pod slab 225 mm 100mm	34.10 None	Waffle Pod 225mm	Vinyl 3mm
Bedroom 1	Waffle pod slab 225 mm 100mm	18.20 None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Unconditioned 1	Waffle pod slab 225 mm 100mm	7.20 None	Waffle Pod 225mm	Ceramic Tiles 8mm
Day Time 1	Waffle pod slab 225 mm 100mm	4.00 None	Waffle Pod 225mm	Vinyl 3mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Unconditioned 1	Plasterboard	Bulk Insulation R5	No
Day Time 1	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Туре	Diameter (mm ²)	Sealed/unsealed
Unconditioned 1	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.50	Medium



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

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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 softw are 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.		
Account 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		
Assessed floor area	design documents.		
Colling popotrotions	features that require a penetration to the ceiling, including dow nlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes		
Ceiling penetrations	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		
conditioned	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 corrid 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 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	tion Code the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4		
(NOC) Class	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.		
	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional		
Provisional value	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 know n as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.		
Peofiwindow	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		
Roof window	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 hast goin coofficiant (SLCC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released		
Solar heat gain coefficient (SHGC)	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)	so 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 chading factures	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy		
Vertical shading features	screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).		