Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0005434880

Generated on 27 Nov 2020 using BERS Pro v4.4.0.2 (3.21)

Property

Address 32 Sydney Street , St Marys , NSW , 2760

Lot/DP 328B/12590

NatHERS climate zone 28

Accredited assessor

Jamie Bonnefin

Certified Energy

[redacted]

Accreditation No. 10056

Assessor Accrediting Organisation HERA

Verification

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

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0005027412-01	1	58.1	41.9	100	5.4
0005027420-01	2	46.8	32.3	79.2	6.4
0005434766	3	49	34.7	83.7	6.2
0005434774	4	47.6	32.6	80.2	6.4
0005434782	5	41.9	27	69	6.9

Continued Over

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/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0005027438-01	6	41.5	33.4	74.9	6.6

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.

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The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005027412-01

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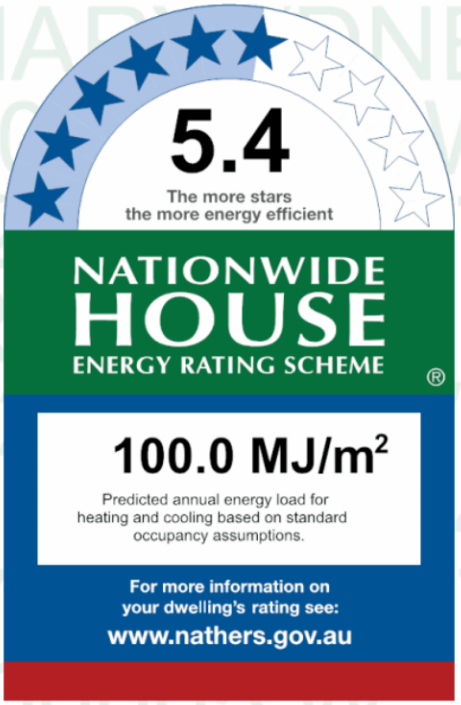

Property

Address	Unit 1, 32 Sydney Street , St Marys , NSW , 2760
Lot/DP	328B/12590
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	08/06/20
Prepared by	N.F. Billyyard P/L

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	91.0	Suburban
Unconditioned*	22.0	**NatHERS climate zone**
Total	113.0	28
Garage	17.0	

Thermal performance

Heating	Cooling
58.1 MJ/m^2	41.9 MJ/m^2

Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
Assessor Accrediting Organisation	
HERA	
Declaration of interest	None

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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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.

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
laundry	ALM-002-01 A	n/a	600	850	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1810	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	1030	1210	n/a	45	N	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	S	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1570	n/a	45	W	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1800	n/a	45	W	No
Bed 1	ALM-002-01 A	n/a	1200	2170	n/a	45	N	No
Bedroom 3	ALM-002-01 A	n/a	1200	1810	n/a	45	S	No
Ensuite	ALM-002-01 A	n/a	600	1210	n/a	45	W	No
Bed 2	ALM-002-01 A	n/a	2100	1810	n/a	45	S	No
Bed 2	ALM-002-01 A	n/a	1200	1810	n/a	45	W	No
Stair	ALM-002-01 A	n/a	1200	1210	n/a	45	W	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-006a	Single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Bath	GEN-04-006a	n/a	50	0.30	E	None	No	0.50

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	3000	90	S
Kitchen/Living	2100	950	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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	3295	S	700	YES
laundry	EW-1	2550	1195	N	500	NO
Kitchen/Living	EW-1	2550	3100	N	1600	YES
Kitchen/Living	EW-1	2550	1100	W	3900	YES
Kitchen/Living	EW-1	2550	2695	N	500	NO
Kitchen/Living	EW-1	2550	700	E	3300	YES
Kitchen/Living	EW-1	2550	300	S	1300	YES
Kitchen/Living	EW-1	2550	800	E	700	YES
Kitchen/Living	EW-1	2550	3500	S	500	NO
Kitchen/Living	EW-1	2550	4000	W	1400	NO
Kitchen/Living	EW-1	2550	400	N	6600	YES
Kitchen/Living	EW-1	2550	2100	W	1100	YES
Kitchen/Living	EW-1	2550	300	S	6600	YES
Kitchen/Living	EW-1	2550	2900	W	800	NO
WIR	EW-2	2450	1390	W	500	NO
Bed 1	EW-2	2450	4100	N	500	NO
Bed 1	EW-2	2450	800	W	3100	YES
Bedroom 3	EW-2	2450	3295	S	500	YES
Ensuite	EW-2	2450	2595	N	500	YES
Ensuite	EW-2	2450	1695	W	500	NO
Bed 2	EW-1	2450	400	N	5800	YES
Bed 2	EW-1	2450	700	E	3300	YES
Bed 2	EW-1	2450	3800	S	400	NO
Bed 2	EW-1	2450	2900	W	600	NO
Stair	EW-1	2450	2190	W	500	YES

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		95.00	No insulation
IW-2 - Cavity brick		22.00	No Insulation
IW-3 - Stud, plasterboard		20.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	16.50	None	No Insulation	Bare
laundry	Concrete Slab on Ground 100mm	3.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	40.60	None	No Insulation	80/20 Ceramic/Cork
WIR/Kitchen/Living	Timber Above Plasterboard 100mm	3.30		No Insulation	Carpet 10mm
Bed 1/Garage	Timber Above Plasterboard 19mm	1.70		No Insulation	Carpet 10mm
Bed 1/laundry	Timber Above Plasterboard 19mm	3.40		No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	9.10		No Insulation	Carpet 10mm
Bedroom 3/Garage	Timber Above Plasterboard 19mm	8.70		No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	4.20		No Insulation	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet 10mm
Bath/Garage	Timber Above Plasterboard 19mm	5.20		No Insulation	Ceramic Tiles 8mm
Stair/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		No Insulation	Carpet 10mm
corridor/Garage	Timber Above Plasterboard 19mm	0.60		No Insulation	Carpet 10mm
corridor/Kitchen/Living	Timber Above Plasterboard 19mm	2.80		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	No Insulation	No
laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Bed 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bed 2	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Stair	Plasterboard	Bulk Insulation R3.5	No
corridor	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Ceiling *penetrations**

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

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

* Refer to glossary.

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.

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

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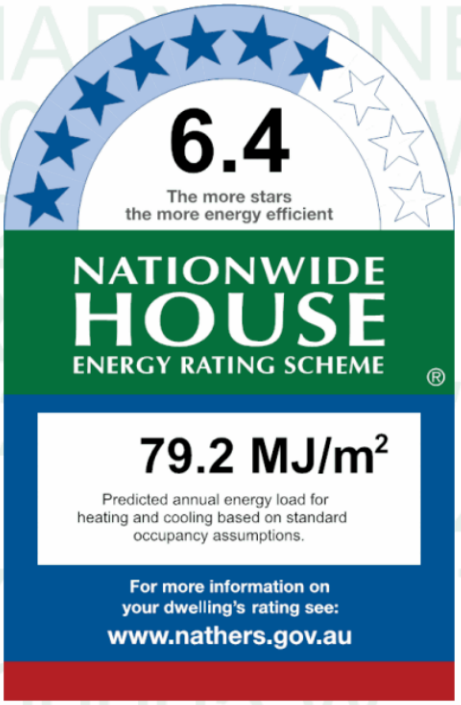

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Lot/DP	328B/12590
NCC Class*	1A
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Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
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Declaration of interest	None

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Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
laundry	ALM-002-01 A	n/a	600	850	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	E	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	E	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	S	No
Kitchen/Living	ALM-002-01 A	n/a	1030	1210	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1810	n/a	45	N	No
Bed 1	ALM-002-01 A	n/a	1200	2170	n/a	45	N	No
Bedroom 3	ALM-002-01 A	n/a	1200	1810	n/a	45	S	No
Ensuite	ALM-002-01 A	n/a	600	1210	n/a	45	N	No
Bed 2	ALM-002-01 A	n/a	2100	1810	n/a	45	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-006a	Single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Bath	GEN-04-006a	n/a	50	0.30	E	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	3000	90	S

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2100	950	90	S

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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	3295	S	700	YES
laundry	EW-1	2550	1195	N	500	NO
Kitchen/Living	EW-1	2550	2900	E	900	NO
Kitchen/Living	EW-1	2550	300	S	6600	YES
Kitchen/Living	EW-1	2550	2100	E	325	YES
Kitchen/Living	EW-1	2550	400	N	6600	YES
Kitchen/Living	EW-1	2550	4000	E	0	NO
Kitchen/Living	EW-1	2550	3500	S	500	NO
Kitchen/Living	EW-1	2550	800	W	700	YES
Kitchen/Living	EW-1	2550	300	S	1300	YES
Kitchen/Living	EW-1	2550	700	W	3300	YES
Kitchen/Living	EW-1	2550	2695	N	500	NO
Kitchen/Living	EW-1	2550	1100	E	4000	YES
Kitchen/Living	EW-1	2550	3100	N	1600	YES
WIR	EW-2	2450	1390	E	500	NO
Bed 1	EW-2	2450	800	E	3100	YES
Bed 1	EW-2	2450	4100	N	500	NO
Bedroom 3	EW-2	2450	3295	S	500	YES
Ensuite	EW-2	2450	1695	E	500	NO
Ensuite	EW-2	2450	2595	N	500	YES
Bed 2	EW-1	2450	2900	E	600	NO
Bed 2	EW-1	2450	3800	S	400	NO
Bed 2	EW-1	2450	700	W	3300	YES
Bed 2	EW-1	2450	400	N	5800	YES
Stair	EW-1	2450	2190	E	500	YES

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		95.00	No insulation
IW-2 - Cavity brick		22.00	No Insulation
IW-3 - Stud, plasterboard		20.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	16.50	None	No Insulation	Bare
laundry	Concrete Slab on Ground 100mm	3.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	40.60	None	No Insulation	80/20 Ceramic/Cork
WIR/Kitchen/Living	Timber Above Plasterboard 100mm	3.30		No Insulation	Carpet 10mm
Bed 1/Garage	Timber Above Plasterboard 19mm	1.70		No Insulation	Carpet 10mm
Bed 1/laundry	Timber Above Plasterboard 19mm	3.40		No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	9.10		No Insulation	Carpet 10mm
Bedroom 3/Garage	Timber Above Plasterboard 19mm	8.70		No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	4.20		No Insulation	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet 10mm
Bath/Garage	Timber Above Plasterboard 19mm	5.20		No Insulation	Ceramic Tiles 8mm
Stair/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		No Insulation	Carpet 10mm
corridor/Garage	Timber Above Plasterboard 19mm	0.60		No Insulation	Carpet 10mm
corridor/Kitchen/Living	Timber Above Plasterboard 19mm	2.80		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	No Insulation	No
laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Bed 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bed 2	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Stair	Plasterboard	Bulk Insulation R3.5	No
corridor	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Ceiling *penetrations**

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

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

* Refer to glossary.

Explanatory notes

About this report

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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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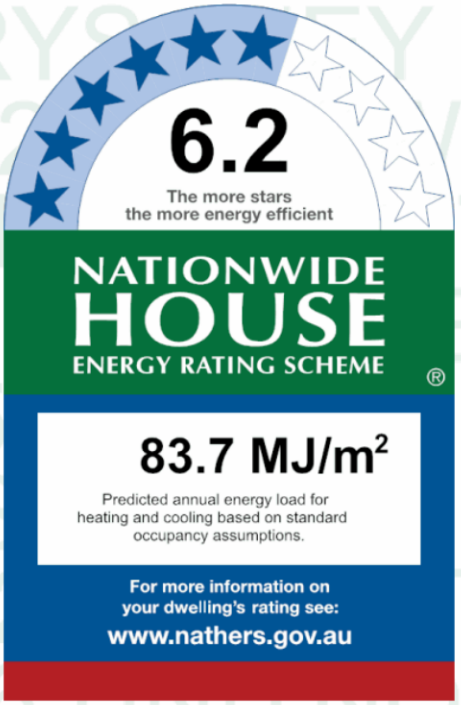
Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005434766

Generated on 27 Nov 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit 3, 32 Sydney Street , St Marys , NSW , 2760
Lot/DP	328B/12590
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	08/06/20
Prepared by	N.F. Billyyard P/L

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	91.0	Suburban
Unconditioned*	22.0	**NatHERS climate zone**
Total	113.0	28
Garage	17.0	

Thermal performance

Heating	Cooling
49.0	**34.7**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
Assessor Accrediting Organisation	
HERA	
Declaration of interest	None

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=XkVtchnsX.
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.

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
laundry	ALM-002-01 A	n/a	600	850	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1810	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	1030	1210	n/a	45	N	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	S	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	W	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	W	No
Bed 1	ALM-002-01 A	n/a	1200	2170	n/a	45	N	No
Bedroom 3	ALM-002-01 A	n/a	1200	1810	n/a	45	S	No
Ensuite	ALM-002-01 A	n/a	600	1210	n/a	45	N	No
Bed 2	ALM-002-01 A	n/a	2100	1810	n/a	45	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-006a	Single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Bath	GEN-04-006a	n/a	50	0.30	W	None	No	0.50
corridor	GEN-04-006a	n/a	50	0.30	W	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	3000	90	S
Kitchen/Living	2100	950	90	S

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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	3295	S	700	YES
laundry	EW-1	2550	1195	N	500	NO
Kitchen/Living	EW-1	2550	3100	N	1600	YES
Kitchen/Living	EW-1	2550	1100	W	4000	YES
Kitchen/Living	EW-1	2550	2695	N	500	NO
Kitchen/Living	EW-1	2550	700	E	3300	YES
Kitchen/Living	EW-1	2550	300	S	1300	YES
Kitchen/Living	EW-1	2550	800	E	700	YES
Kitchen/Living	EW-1	2550	3500	S	500	NO
Kitchen/Living	EW-1	2550	4000	W	0	NO
Kitchen/Living	EW-1	2550	400	N	6600	YES
Kitchen/Living	EW-1	2550	2100	W	325	YES
Kitchen/Living	EW-1	2550	300	S	6600	YES
Kitchen/Living	EW-1	2550	2900	W	900	NO
WIR	EW-2	2450	1390	W	500	NO
Bed 1	EW-2	2450	4100	N	500	NO
Bed 1	EW-2	2450	800	W	3100	YES
Bedroom 3	EW-2	2450	3295	S	500	YES
Ensuite	EW-2	2450	2595	N	500	YES
Ensuite	EW-2	2450	1695	W	500	NO
Bed 2	EW-1	2450	400	N	5800	YES
Bed 2	EW-1	2450	700	E	3300	YES
Bed 2	EW-1	2450	3800	S	400	NO
Bed 2	EW-1	2450	2900	W	600	NO
Stair	EW-1	2450	2190	W	500	YES

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		95.00	No insulation
IW-2 - Cavity brick		22.00	No Insulation
IW-3 - Stud, plasterboard		20.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	16.50	None	No Insulation	Bare
laundry	Concrete Slab on Ground 100mm	3.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	40.60	None	No Insulation	80/20 Ceramic/Cork
WIR/Kitchen/Living	Timber Above Plasterboard 100mm	3.30		No Insulation	Carpet 10mm
Bed 1/Garage	Timber Above Plasterboard 19mm	1.70		No Insulation	Carpet 10mm
Bed 1/laundry	Timber Above Plasterboard 19mm	3.40		No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	9.10		No Insulation	Carpet 10mm
Bedroom 3/Garage	Timber Above Plasterboard 19mm	8.70		No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	4.20		No Insulation	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet 10mm
Bath/Garage	Timber Above Plasterboard 19mm	5.20		No Insulation	Ceramic Tiles 8mm
Stair/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		No Insulation	Carpet 10mm
corridor/Garage	Timber Above Plasterboard 19mm	0.60		No Insulation	Carpet 10mm
corridor/Kitchen/Living	Timber Above Plasterboard 19mm	2.80		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	No Insulation	No
laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Bed 1	Plasterboard	Bulk Insulation R3.5	No
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Bath	Plasterboard	Bulk Insulation R3.5	No
Stair	Plasterboard	Bulk Insulation R3.5	No
corridor	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Ceiling *penetrations**

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

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
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Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005434774

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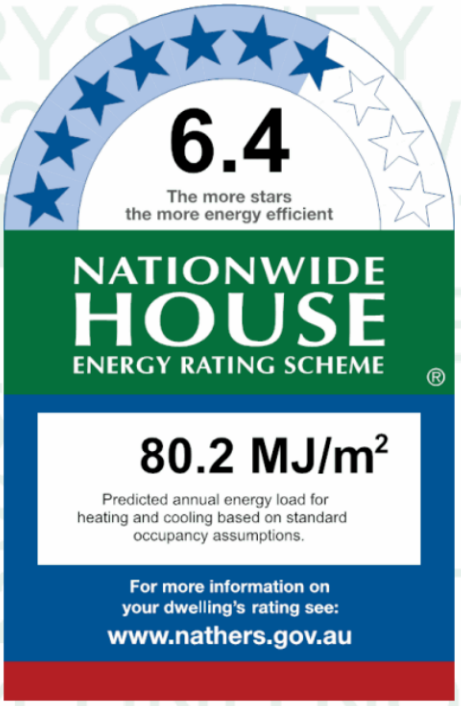

Property

Address	Unit 4, 32 Sydney Street , St Marys , NSW , 2760
Lot/DP	328B/12590
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	08/06/20
Prepared by	N.F. Billyyard P/L

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	91.0	Suburban
Unconditioned*	22.0	**NatHERS climate zone**
Total	113.0	28
Garage	17.0	

Thermal performance

Heating	Cooling
47.6 MJ/m^2	32.6 MJ/m^2

Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
Assessor Accrediting Organisation	
HERA	
Declaration of interest	None

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=TvUUXHEfX.
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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.

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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?

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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
laundry	ALM-002-01 A	n/a	600	850	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	E	No
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	E	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	1800	1210	n/a	45	S	No
Kitchen/Living	ALM-002-01 A	n/a	1030	1210	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1810	n/a	45	N	No
Bed 1	ALM-002-01 A	n/a	1200	2170	n/a	45	N	No
Bedroom 3	ALM-002-01 A	n/a	1200	1810	n/a	45	S	No
Ensuite	ALM-002-01 A	n/a	600	1210	n/a	45	N	No
Bed 2	ALM-002-01 A	n/a	2100	1810	n/a	45	S	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-006a	Single-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Bath	GEN-04-006a	n/a	50	0.30	E	None	No	0.50
corridor	GEN-04-006a	n/a	50	0.30	E	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	3000	90	S
Kitchen/Living	2100	950	90	S

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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	3295	S	700	YES
laundry	EW-1	2550	1195	N	500	NO
Kitchen/Living	EW-1	2550	2900	E	900	NO
Kitchen/Living	EW-1	2550	300	S	6600	YES
Kitchen/Living	EW-1	2550	2100	E	325	YES
Kitchen/Living	EW-1	2550	400	N	6600	YES
Kitchen/Living	EW-1	2550	4000	E	0	NO
Kitchen/Living	EW-1	2550	3500	S	500	NO
Kitchen/Living	EW-1	2550	800	W	700	YES
Kitchen/Living	EW-1	2550	300	S	1300	YES
Kitchen/Living	EW-1	2550	700	W	3300	YES
Kitchen/Living	EW-1	2550	2695	N	500	NO
Kitchen/Living	EW-1	2550	1100	E	4000	YES
Kitchen/Living	EW-1	2550	3100	N	1600	YES
WIR	EW-2	2450	1390	E	500	NO
Bed 1	EW-2	2450	800	E	3100	YES
Bed 1	EW-2	2450	4100	N	500	NO
Bedroom 3	EW-2	2450	3295	S	500	YES
Ensuite	EW-2	2450	1695	E	500	NO
Ensuite	EW-2	2450	2595	N	500	YES
Bed 2	EW-1	2450	2900	E	600	NO
Bed 2	EW-1	2450	3800	S	400	NO
Bed 2	EW-1	2450	700	W	3300	YES
Bed 2	EW-1	2450	400	N	5800	YES
Stair	EW-1	2450	2190	E	500	YES

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		95.00	No insulation
IW-2 - Cavity brick		22.00	No Insulation
IW-3 - Stud, plasterboard		20.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	16.50	None	No Insulation	Bare
laundry	Concrete Slab on Ground 100mm	3.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	40.60	None	No Insulation	80/20 Ceramic/Cork
WIR/Kitchen/Living	Timber Above Plasterboard 100mm	3.30		No Insulation	Carpet 10mm
Bed 1/Garage	Timber Above Plasterboard 19mm	1.70		No Insulation	Carpet 10mm
Bed 1/laundry	Timber Above Plasterboard 19mm	3.40		No Insulation	Carpet 10mm
Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	9.10		No Insulation	Carpet 10mm
Bedroom 3/Garage	Timber Above Plasterboard 19mm	8.70		No Insulation	Carpet 10mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	4.20		No Insulation	Ceramic Tiles 8mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.80		No Insulation	Carpet 10mm
Bath/Garage	Timber Above Plasterboard 19mm	5.20		No Insulation	Ceramic Tiles 8mm
Stair/Kitchen/Living	Timber Above Plasterboard 19mm	4.50		No Insulation	Carpet 10mm
corridor/Garage	Timber Above Plasterboard 19mm	0.60		No Insulation	Carpet 10mm
corridor/Kitchen/Living	Timber Above Plasterboard 19mm	2.80		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	No Insulation	No
laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Bed 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bed 2	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Stair	Plasterboard	Bulk Insulation R3.5	No
corridor	Plasterboard	Bulk Insulation R3.5	No

* Refer to glossary.

Ceiling *penetrations**

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

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

* Refer to glossary.

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 software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005434782

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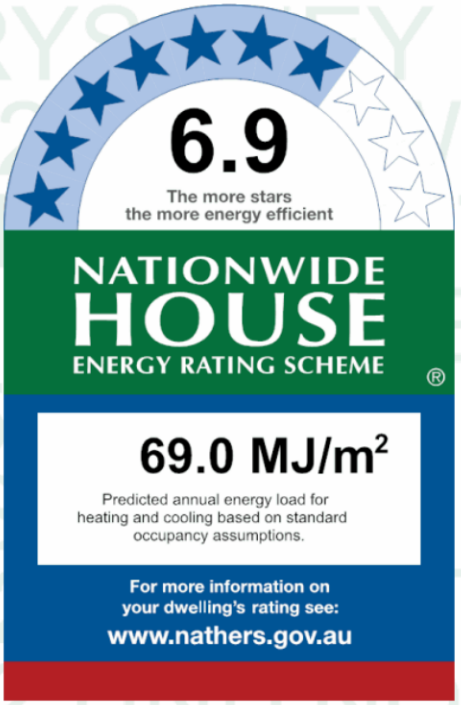

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Lot/DP	328B/12590
NCC Class*	1A
Type	New Dwelling

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Prepared by	N.F. Billyyard P/L

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Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	83.0	Suburban
Unconditioned*	21.0	**NatHERS climate zone**
Total	104.0	28
Garage	16.0	

Thermal performance

Heating	Cooling
41.9 MJ/m^2	27.0 MJ/m^2

Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
Assessor Accrediting Organisation	
HERA	
Declaration of interest	None

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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?

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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure 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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
laundry	ALM-002-01 A	n/a	600	850	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	1030	1210	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1810	n/a	45	N	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-002-01 A	n/a	1200	1810	n/a	45	S	No
Bed 2	ALM-002-01 A	n/a	1200	1810	n/a	45	N	No
Media	ALM-002-01 A	n/a	500	500	n/a	00	E	No Shading
Bathroom	ALM-002-01 A	n/a	600	1570	n/a	45	S	No
Ensuite	ALM-002-01 A	n/a	600	1210	n/a	45	W	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	3000	90	S
Kitchen/Living	2100	950	90	S

* Refer to glossary.

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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No
EW-3	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	3295	S	700	YES
Garage	EW-1	2550	5395	W	400	NO
laundry	EW-1	2550	3195	W	400	NO
laundry	EW-1	2550	1195	N	500	NO
Kitchen/Living	EW-1	2550	3500	S	1600	NO
Kitchen/Living	EW-1	2550	400	W	3700	YES
Kitchen/Living	EW-1	2550	2295	N	500	NO
Kitchen/Living	EW-1	2550	1100	E	3300	YES
Kitchen/Living	EW-1	2550	3300	N	1600	YES
WIR	EW-2	2450	1890	W	500	NO
Bedroom 1	EW-2	2450	3295	S	600	NO
Bedroom 1	EW-2	2450	4095	W	500	NO
Bed 2	EW-2	2450	595	N	1000	YES
Bed 2	EW-2	2450	600	W	4000	YES
Bed 2	EW-2	2450	3300	N	400	NO
Stair	EW-3	2450	1295	S	600	NO
Bathroom	EW-3	2450	2190	S	600	NO
Ensuite	EW-3	2450	1595	W	500	NO
Ensuite	EW-3	2450	2895	N	1000	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		91.00	No insulation
IW-2 - Cavity brick		20.00	No Insulation
IW-3 - Stud, plasterboard		20.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	16.00	None	No Insulation	Bare
laundry	Concrete Slab on Ground 100mm	3.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	35.50	None	No Insulation	80/20 Ceramic/Cork
WIR/Garage	Timber Above Plasterboard 100mm	4.90		No Insulation	Carpet 10mm
Bedroom 1/Garage	Timber Above Plasterboard 19mm	10.70		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 19mm	0.90		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 19mm	1.60	Totally Open	No Insulation	Carpet 10mm
Bed 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.30		No Insulation	Carpet 10mm
Bed 2	Suspended Timber Floor 19mm	0.70	Totally Open	No Insulation	Carpet 10mm
Stair/Kitchen/Living	Timber Above Plasterboard 19mm	4.10		No Insulation	Carpet 10mm
Media/Kitchen/Living	Timber Above Plasterboard 19mm	7.70		No Insulation	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 19mm	5.40		No Insulation	Ceramic Tiles 8mm
Ensuite/laundry	Timber Above Plasterboard 19mm	1.80		No Insulation	Ceramic Tiles 8mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	2.60		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	No Insulation	No
laundry	Plasterboard	Bulk Insulation R3.5	No
laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WIR	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bed 2	Plasterboard	Bulk Insulation R3.5	No
Stair	Plasterboard	Bulk Insulation R3.5	No
Media	Plasterboard	Bulk Insulation R3.5	No
Bathroom	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

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

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

* Refer to glossary.

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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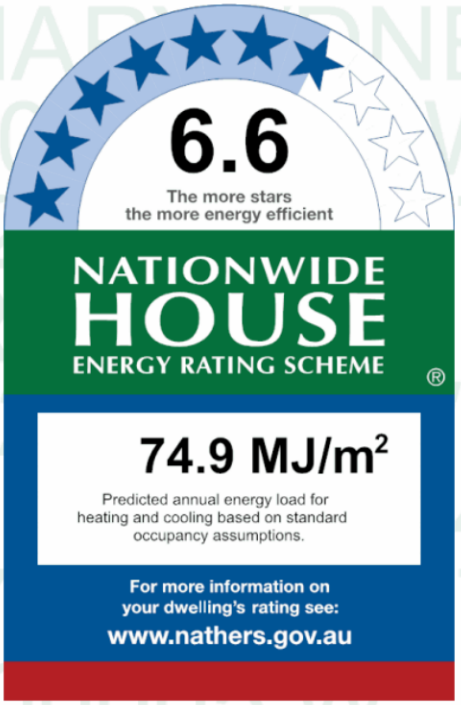
Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005027438-01

Generated on 27 Nov 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit 6, 32 Sydney Street , St Marys , NSW , 2760
Lot/DP	328B/12590
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	08/06/20
Prepared by	N.F. Billyyard P/L

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	89.0	Suburban
Unconditioned*	22.0	**NatHERS climate zone**
Total	111.0	28
Garage	15.0	

Thermal performance

Heating	Cooling
41.5 MJ/m^2	33.4 MJ/m^2

Accredited assessor

Name	Jamie Bonnefin
Business name	Certified Energy
Email	[redacted]
Phone	
Accreditation No.	10056
Assessor Accrediting Organisation	
HERA	
Declaration of interest	None

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=VMCUnbEIr.
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.

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen / Dinin	ALM-002-01 A	n/a	600	850	n/a	45	E	No
Kitchen / Dinin	ALM-002-01 A	n/a	1800	1570	n/a	45	E	No
Kitchen / Dinin	ALM-002-01 A	n/a	2100	1810	n/a	45	E	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed1	ALM-002-01 A	n/a	1200	1810	n/a	45	E	No
Bed 2	ALM-002-01 A	n/a	1200	1810	n/a	45	N	No
Bed 2	ALM-002-01 A	n/a	1200	1810	n/a	45	E	No
Media	ALM-002-01 A	n/a	1200	1570	n/a	45	E	No
Bedroom 1	ALM-002-01 A	n/a	1200	1570	n/a	45	N	No
Ensuite	ALM-002-01 A	n/a	600	610	n/a	45	N	No
Bathroom	ALM-002-01 A	n/a	600	850	n/a	45	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	2550	90	E

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	2700	90	W
Kitchen / Dinin	2040	820	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	Anti-glare foil with bulk no gap R2	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No
EW-3	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2	No
EW-4	Fibro Cavity Panel on Battens	0.50	Medium	Anti-glare foil with bulk no gap R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-1	2550	2895	E	1100	NO
Garage	EW-1	2550	5300	S	1000	NO
Garage	EW-1	2550	2895	W	1800	NO
Kitchen / Dinin	EW-1	2550	1195	E	500	NO
Kitchen / Dinin	EW-1	2550	600	S	9800	YES
Kitchen / Dinin	EW-1	2550	5895	E	1100	YES
Kitchen / Dinin	EW-1	2550	1695	W	1800	NO
Bed1	EW-2	2450	695	E	300	NO
Bed1	EW-2	2450	200	S	3500	YES
Bed1	EW-2	2450	3100	E	500	YES
Bed1	EW-2	2450	3500	S	400	NO
Bed 2	EW-1	2450	4000	N	500	NO
Bed 2	EW-2	2450	2900	E	300	NO
Bed 2	EW-2	2450	300	S	9300	YES
Bed 2	EW-2	2450	595	E	600	YES
Media	EW-2	2450	1990	E	300	NO
Bedroom 1	EW-3	2550	3295	N	800	NO
Ensuite	EW-3	2550	2595	N	800	NO
Ensuite	EW-3	2550	1195	E	500	NO
Laundry	EW-3	2550	1590	E	500	NO
Bathroom	EW-4	2450	2490	E	300	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		92.00	No insulation
IW-2 - Cavity brick		21.00	No Insulation
IW-3 - Stud, plasterboard		29.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	15.10	None	No Insulation	Ceramic Tiles 8mm
Kitchen / Dinin	Concrete Slab on Ground 100mm	34.80	None	No Insulation	Ceramic Tiles 8mm
Bed1/Garage	Timber Above Plasterboard 100mm	6.50		No Insulation	Carpet 10mm
Bed1/Kitchen / Dinin	Timber Above Plasterboard 100mm	5.70		No Insulation	Carpet 10mm
Bathroom/Kitchen / Dinin	Timber Above Plasterboard 100mm	2.60		No Insulation	Ceramic Tiles 8mm
Bed 2/Bedroom 1	Timber Above Plasterboard 100mm	10.00		No Insulation	Carpet 10mm
Bed 2/Ensuite	Timber Above Plasterboard 100mm	0.80		No Insulation	Carpet 10mm
Bed 2/WIR	Timber Above Plasterboard 100mm	1.10		No Insulation	Carpet 10mm
Media/Kitchen / Dinin	Timber Above Plasterboard 100mm	6.50		No Insulation	Carpet 10mm
Media/Bedroom 1	Timber Above Plasterboard 100mm	2.00		No Insulation	Carpet 10mm
Bedroom 1	Concrete Slab on Ground 100mm	11.90	None	No Insulation	Ceramic Tiles 8mm
Ensuite	Concrete Slab on Ground 100mm	2.90	None	No Insulation	Ceramic Tiles 8mm
Laundry	Concrete Slab on Ground 100mm	1.70	None	No Insulation	Ceramic Tiles 8mm
WIR	Concrete Slab on Ground 100mm	2.00	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen / Dinin	Timber Above Plasterboard 100mm	2.80		No Insulation	Carpet 10mm
Bathroom/Kitchen / Dinin	Timber Above Plasterboard 100mm	4.00		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	Bulk Insulation R3.5	No
Garage	Timber Above Plasterboard	No Insulation	No
Kitchen / Dinin	Plasterboard	Bulk Insulation R3.5	No
Kitchen / Dinin	Timber Above Plasterboard	No Insulation	No
Bed1	Plasterboard	Bulk Insulation R3.5	No
Bathroom	Plasterboard	Bulk Insulation R3.5	No
Bed 2	Plasterboard	Bulk Insulation R3.5	No
Media	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Timber Above Plasterboard	No Insulation	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No

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Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Ensuite	Timber Above Plasterboard	No Insulation	No
Laundry	Plasterboard	Bulk Insulation R3.5	No
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Bathroom	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

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

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark

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Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.