Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0005364010

Generated on 05 Nov 2020 using BERS Pro v4.4.0.2 (3.21)

Property

Address 4 Southern Cross Way , Allambie Heights , NSW , 2100

Lot/DP 2316/752038

NatHERS climate zone 56

Accredited assessor

John Boutros

Greenworld Architectural Drafting

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02 9652 0045

Accreditation No. DMN/16/1763

Assessor Accrediting Organisation Design Matters National

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ZERDIvfQW . 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
0005363973	Gran	42.3	14.1	56.4	5.7
0005363932	Main	39.8	19.5	59.3	5.4

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.

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.

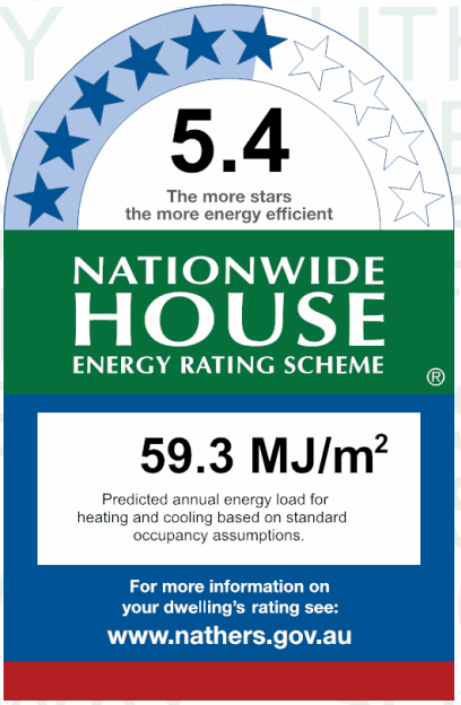
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

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. 0005363932

Generated on 05 Nov 2020 using BERS Pro v4.4.0.2 (3.21)



Property

Address	Unit Main, 4 Southern Cross Way , Allambie Heights , NSW , 2100
Lot/DP	2316/752038
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Issue A
Prepared by	Sabton Son

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	328.0	Suburban
Unconditioned*	108.0	**NatHERS climate zone**
Total	437.0	56
Garage	87.0	

Thermal performance

Heating	Cooling
39.8 MJ/m^2	19.5 MJ/m^2

Accredited assessor

Name	John Boutros
Business name	Greenworld Architectural Drafting
Email	greenworldarchi@outlook.com
Phone	02 9652 0045
Accreditation No.	DMN/16/1763
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

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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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?

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
ALM-002-03 A	ALM-002-03 A Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.58	0.58
ALM-001-03 A	ALM-001-03 A Aluminium A SG High Solar Gain Low-E	5.4	0.49	0.49	0.49
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.57	0.57

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Hobby Room	ALM-002-01 A	n/a	2400	2700	n/a	60	S	No
Hobby Room	ALM-002-01 A	n/a	600	2400	n/a	45	N	No
Hobby Room	ALM-002-01 A	n/a	600	2400	n/a	45	N	No
Hobby Room	ALM-002-01 A	n/a	1100	600	n/a	45	E	No
Rumpus	ALM-002-03 A	n/a	2400	4800	n/a	60	E	No
Rumpus	ALM-002-03 A	n/a	1500	3000	n/a	45	S	No
Media/Store	ALM-002-03 A	n/a	900	2400	n/a	45	S	No
Media/Store	ALM-002-03 A	n/a	900	1500	n/a	45	N	No
Media/Store	ALM-002-03 A	n/a	900	1500	n/a	45	N	No
LG Bath	ALM-002-01 A	n/a	900	900	n/a	45	E	No
Garage	ALM-002-01 A	n/a	600	1200	n/a	45	S	No
Garage	ALM-002-01 A	n/a	600	1200	n/a	45	S	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	600	3600	n/a	00	N	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	1200	1200	n/a	45	N	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	1500	3600	n/a	45	E	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	2400	2700	n/a	60	S	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	2400	4800	n/a	60	E	No
Kitc/Liv/Entry	ALM-002-03 A	n/a	1500	3000	n/a	45	S	No
UG Bath	ALM-002-01 A	n/a	600	1200	n/a	45	N	No
UG Bedroom	ALM-002-03 A	n/a	1350	2400	n/a	45	W	No
Bedroom 2	ALM-002-03 A	n/a	1500	1400	n/a	00	S	No
Bedroom 2	ALM-001-03 A	n/a	1350	900	n/a	90	S	No
Bedroom 2	ALM-002-03 A	n/a	2400	3600	n/a	45	E	No
Bedroom 3	ALM-001-03 A	n/a	1350	900	n/a	90	S	No
Bedroom 3	ALM-002-03 A	n/a	2400	2700	n/a	45	W	No
Bedroom 4	ALM-002-03 A	n/a	1350	2400	n/a	45	W	No
WC	ALM-002-01 A	n/a	600	1200	n/a	45	N	No
FF Bath	ALM-002-01 A	n/a	600	1200	n/a	45	N	No
FF Hallway	ALM-002-03 A	n/a	2400	1600	n/a	00	W	No
Master Bedroom	ALM-002-03 A	n/a	1500	1200	n/a	00	N	No
Master Bedroom	ALM-002-03 A	n/a	1500	4500	n/a	30	E	No
Master Bedroom	ALM-002-03 A	n/a	1500	900	n/a	00	S	No
Master Bedroom	ALM-002-03 A	n/a	2400	1800	n/a	45	E	No
Ens	ALM-001-01 A	n/a	900	600	n/a	90	N	No
Ens	ALM-001-01 A	n/a	900	600	n/a	90	N	No

* Refer to glossary.

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
Hobby Room	2400	2400	90	E
Media/Store	2400	820	90	S
LG Bath	2400	820	90	S
Garage	2200	2520	90	W
Garage	2200	2520	90	W
Kitc/Liv/Entry	2400	1800	90	W

External wall *type*

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

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-2	Concrete Block	0.50	Medium	No insulation	No
EW-3	Cavity Brick	0.50	Medium	Bulk Insulation R2.5	No
EW-4	Cavity Brick	0.50	Medium	Bulk Insulation R1.9	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Hobby Room	EW-1	2700	3600	S	7100	YES
Hobby Room	EW-1	2700	13145	N	0	NO
Hobby Room	EW-1	2700	4500	E	0	NO
Rumpus	EW-1	2700	6045	E	3600	YES
Rumpus	EW-1	2700	4845	S	1000	NO
Media/Store	EW-1	2770	3845	S	0	NO
Media/Store	EW-1	2770	6200	W	3700	YES
Media/Store	EW-1	2770	2200	S	6263	YES
Media/Store	EW-2	2770	6400	W	300	NO
Media/Store	EW-1	2770	3645	N	0	NO
LG Bath	EW-1	2770	145	S	1000	YES
LG Bath	EW-1	2770	2000	E	8700	YES
LG Bath	EW-1	2770	2045	S	0	NO
Garage	EW-3	2700	6100	S	300	NO
Garage	EW-3	2700	5995	W	300	NO
Garage	EW-3	2700	2000	E	8900	YES
Kitc/Liv/Entry	EW-3	2700	2590	W	800	YES
Kitc/Liv/Entry	EW-3	2700	10395	N	300	NO
Kitc/Liv/Entry	EW-3	2700	4500	E	300	NO
Kitc/Liv/Entry	EW-3	2700	3600	S	7400	YES
Kitc/Liv/Entry	EW-3	2700	6100	E	3900	YES
Kitc/Liv/Entry	EW-4	2700	4995	S	1300	YES
UG Bath	EW-3	2550	2390	N	0	NO
UG Bedroom	EW-3	2550	2100	S	300	YES
UG Bedroom	EW-3	2550	4000	W	300	NO
UG Bedroom	EW-3	2550	3995	N	300	NO
Bedroom 2	EW-3	2550	7395	S	300	NO
Bedroom 2	EW-3	2550	3995	E	1300	NO
Bedroom 3	EW-3	2700	4695	S	300	NO
Bedroom 3	EW-3	2700	3995	W	1900	YES
Bedroom 4	EW-3	2700	2100	S	300	YES
Bedroom 4	EW-3	2700	4000	W	300	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 4	EW-3	2700	3900	N	300	NO
Bedroom 4	EW-3	2700	500	E	13200	YES
WC	EW-3	2700	1990	N	300	YES
FF Bath	EW-3	2700	2490	N	300	NO
FF Hallway	EW-3	2700	1600	S	4300	YES
FF Hallway	EW-3	2700	2595	W	300	YES
Master Bedroom	EW-3	2550	500	W	11900	YES
Master Bedroom	EW-3	2550	5200	N	300	NO
Master Bedroom	EW-3	2550	4500	E	300	NO
Master Bedroom	EW-3	2550	1000	S	6400	YES
Master Bedroom	EW-3	2550	2095	E	1300	YES
Ens	EW-3	2550	3190	N	300	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Single Skin Brick		87.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		172.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hobby Room	Concrete Slab on Ground 100mm	51.00	None	No Insulation	Bare
Rumpus	Concrete Slab on Ground 100mm	45.70	None	No Insulation	40/60 Carpet 10mm/Ceramic
Media/Store	Concrete Slab on Ground 100mm	53.40	None	No Insulation	40/60 Carpet 10mm/Ceramic
LG Bath	Concrete Slab on Ground 100mm	6.40	None	No Insulation	Ceramic Tiles 8mm
Garage/Media/Store	Concrete Above Plasterboard 150mm	28.30		No Insulation	Carpet 10mm
Garage/LG Bath	Concrete Above Plasterboard 150mm	5.50		No Insulation	Carpet 10mm
Garage	Suspended Concrete Slab 150mm	2.40	Open	No Insulation	Bare
Kitc/Liv/Entry/Hobby Room	Concrete Above Plasterboard 150mm	42.60		No Insulation	Carpet 10mm
Kitc/Liv/Entry/Rumpus	Concrete Above Plasterboard 150mm	44.10		No Insulation	Carpet 10mm
Kitc/Liv/Entry/Media/Store	Concrete Above Plasterboard 150mm	7.20		No Insulation	Carpet 10mm
Kitc/Liv/Entry/LG Bath	Concrete Above Plasterboard 150mm	0.50		No Insulation	Carpet 10mm
UG Bath/Hobby Room	Concrete Above Plasterboard 150mm	6.60		No Insulation	Carpet 10mm
UG Bedroom/Media/Store	Concrete Above Plasterboard 150mm	14.10		No Insulation	Carpet 10mm
UG Bedroom	Suspended Concrete Slab 150mm	1.20	Open	No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2/Kitc/Liv/Entry	Concrete Above Plasterboard 150mm	13.30		No Insulation	Carpet 10mm
Bedroom 2	Suspended Concrete Slab 150mm	10.20	Open	No Insulation	Carpet 10mm
Bedroom 3/Garage	Concrete Above Plasterboard 19mm	17.60		No Insulation	Carpet 10mm
Bedroom 3/Kitc/Liv/Entry	Concrete Above Plasterboard 19mm	0.80		No Insulation	Carpet 10mm
Bedroom 4/UG Bedroom	Concrete Above Plasterboard 19mm	15.00		No Insulation	Carpet 10mm
WC/UG Bath	Concrete Above Plasterboard 19mm	2.30		No Insulation	Ceramic Tiles 8mm
FF Bath/Kitc/Liv/Entry	Concrete Above Plasterboard 19mm	4.50		No Insulation	Ceramic Tiles 8mm
FF Bath/UG Bath	Concrete Above Plasterboard 19mm	1.10		No Insulation	Ceramic Tiles 8mm
FF Hallway/Kitc/Liv/Entry	Concrete Above Plasterboard 19mm	31.30		No Insulation	Carpet 10mm
FF Hallway/UG Bath	Concrete Above Plasterboard 19mm	2.00		No Insulation	Carpet 10mm
Master Bedroom/Kitc/Liv/Entry	Concrete Above Plasterboard 150mm	32.70		No Insulation	Carpet 10mm
Master Bedroom	Suspended Concrete Slab 150mm	5.40	Open	No Insulation	Carpet 10mm
Ens/Kitc/Liv/Entry	Concrete Above Plasterboard 19mm	7.30		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Hobby Room	Plasterboard	Bulk Insulation R2.5	No
Hobby Room	Concrete Above Plasterboard	No Insulation	No
Rumpus	Plasterboard	Bulk Insulation R2.5	No
Rumpus	Concrete Above Plasterboard	No Insulation	No
Media/Store	Plasterboard	Bulk Insulation R2.5	No
Media/Store	Concrete Above Plasterboard	No Insulation	No
LG Bath	Plasterboard	Bulk Insulation R2.5	No
LG Bath	Concrete Above Plasterboard	No Insulation	No
Garage	Plasterboard	Bulk Insulation R4.5	No
Garage	Concrete Above Plasterboard	No Insulation	No
Kitc/Liv/Entry	Plasterboard	Bulk Insulation R4.5	No
Kitc/Liv/Entry	Concrete Above Plasterboard	No Insulation	No
UG Bath	Plasterboard	Bulk Insulation R4.5	No
UG Bath	Concrete Above Plasterboard	No Insulation	No
UG Bedroom	Concrete Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Bulk Insulation R4.5	No
Bedroom 3	Plasterboard	Bulk Insulation R4.5	No
Bedroom 4	Plasterboard	Bulk Insulation R4.5	No
WC	Plasterboard	Bulk Insulation R4.5	No
FF Bath	Plasterboard	Bulk Insulation R4.5	No
FF Hallway	Plasterboard	Bulk Insulation R4.5	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Master Bedroom	Plasterboard	Bulk Insulation R4.5	No
Ens	Plasterboard	Bulk Insulation R4.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Hobby Room	20	Downlights - LED	450	Sealed
Rumpus	15	Downlights - LED	450	Sealed
Media/Store	24	Downlights - LED	450	Sealed
LG Bath	4	Downlights - LED	450	Sealed
LG Bath	1	Exhaust Fans	300	Sealed
Garage	16	Downlights - LED	450	Sealed
Kitc/Liv/Entry	40	Downlights - LED	150	Sealed
Kitc/Liv/Entry	1	Exhaust Fans	300	Sealed
UG Bath	4	Downlights - LED	150	Sealed
UG Bath	1	Exhaust Fans	300	Sealed
UG Bedroom	6	Downlights - LED	150	Sealed
Bedroom 2	10	Downlights - LED	450	Sealed
Bedroom 3	12	Downlights - LED	450	Sealed
Bedroom 4	9	Downlights - LED	450	Sealed
WC	2	Downlights - LED	450	Sealed
WC	1	Exhaust Fans	300	Sealed
FF Bath	4	Downlights - LED	450	Sealed
FF Bath	1	Exhaust Fans	300	Sealed
FF Hallway	15	Downlights - LED	450	Sealed
Master Bedroom	15	Downlights - LED	150	Sealed
Ens	4	Downlights - LED	150	Sealed
Ens	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
Concrete	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Both Sides R1.4	0.50	Medium

* 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.
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.
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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.
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Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005363957

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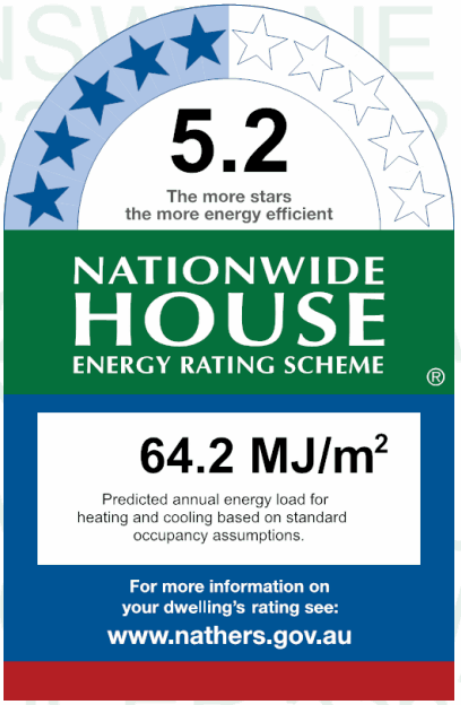

Property

Address	Unit 2, 60 Lucerne St , Belmore , NSW , 2192
Lot/DP	33/5200
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Rev. G
Prepared by	ArchiSpectrum

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	128.0	Suburban
Unconditioned*	25.0	**NatHERS climate zone**
Total	153.0	56
Garage	17.0	

Thermal performance

Heating	Cooling
39.8	**24.4**
MJ/m^2	MJ/m^2

Accredited assessor

Name	John Boutros
Business name	Greenworld Architectural Drafting
Email	greenworldarchi@outlook.com
Phone	02 9652 0045
Accreditation No.	DMN/16/1763
Assessor Accrediting Organisation	
Design Matters National	
Declaration of interest	Declaration completed: no conflicts

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=bcKlLKEUd.
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-004-03 A	ALM-004-03 A Aluminium B DG Air Fill High Solar Gain low-E -Clear	4.3	0.53	0.53	0.53
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.70	0.70
ALM-002-03 A	ALM-002-03 A Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.58	0.58

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-03 A	n/a	600	1000	n/a	45	SW	No
Kitchen/Living	ALM-004-03 A	n/a	2600	1000	n/a	00	SW	No
Kitchen/Living	ALM-004-03 A	n/a	2400	5900	n/a	45	NE	No
WC	ALM-002-01 A	n/a	800	1200	n/a	45	SW	No
Garage	ALM-002-01 A	n/a	1400	1000	n/a	45	NE	No
FF Hallway	ALM-004-03 A	n/a	2600	1000	n/a	30	SW	No
FF Hallway	ALM-004-03 A	n/a	1400	1000	n/a	45	NE	No
FF Bath	ALM-002-01 A	n/a	800	800	n/a	45	NE	No
Bedroom 3	ALM-002-03 A	n/a	1400	2400	n/a	45	NE	No
Bedroom 2	ALM-004-03 A	n/a	2400	2700	n/a	45	SW	No
Bedroom 4	ALM-002-03 A	n/a	1400	3600	n/a	45	SW	No
Master Bedroom	ALM-002-03 A	n/a	600	1500	n/a	45	SW	No
Ens	ALM-002-01 A	n/a	600	1500	n/a	45	SW	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

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Master Bedroom	GEN-04-006a	n/a	350	0.70	N	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	920	90	SW
Garage	2200	2850	90	SW
Garage	2400	820	90	NE

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	Foil, Anti-glare one side + Bulk Insulation R2	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Foil, Anti-glare one side + Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	2295	SW	200	NO
Kitchen/Living	EW-1	2700	2295	SW	0	NO
Kitchen/Living	EW-1	2700	3000	NW	4400	YES
Kitchen/Living	EW-1	2700	5995	NE	300	YES
WC	EW-1	2700	1390	SW	200	NO
Garage	EW-1	2700	3095	SW	3200	YES
Garage	EW-1	2700	3100	NE	0	NO
Garage	EW-1	2700	600	SE	0	YES
FF Hallway	EW-1	2600	500	SE	6300	YES
FF Hallway	EW-1	2600	2200	SW	200	NO
FF Hallway	EW-1	2600	1100	NW	5200	YES
FF Hallway	EW-1	2600	1590	NE	300	NO
FF Bath	EW-1	2600	3095	NE	300	NO
Bedroom 3	EW-1	2600	4395	NE	0	NO
Bedroom 2	EW-1	2600	3095	SW	1300	YES
Bedroom 4	EW-1	2600	3795	SW	700	YES
Master Bedroom	EW-2	2100	4200	NE	0	YES
Master Bedroom	EW-2	2100	400	NW	0	YES
Master Bedroom	EW-2	2100	3700	NE	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Master Bedroom	EW-2	2100	4300	SE	0	NO
Master Bedroom	EW-2	2100	1100	SW	0	YES
Master Bedroom	EW-2	2100	1000	SE	0	YES
Master Bedroom	EW-2	2100	1600	SW	0	NO
Master Bedroom	EW-2	2100	1000	NW	2500	YES
Master Bedroom	EW-2	2100	2095	SW	0	YES
Ens	EW-2	2100	395	SW	0	YES
Ens	EW-2	2100	1000	SE	2500	YES
Ens	EW-2	2100	1600	SW	0	NO
Ens	EW-2	2100	1300	NW	2400	YES
Ens	EW-2	2100	1100	SW	0	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		81.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		97.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	43.20	None	No Insulation	Cork Tiles or Parquetry 8mm
WC	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Ceramic Tiles 8mm
Garage	Concrete Slab on Ground 100mm	16.50	None	No Insulation	Bare
FF Hallway/Kitchen/Living	Timber Above Plasterboard 19mm	15.50		No Insulation	Carpet 10mm
FF Bath/Garage	Timber Above Plasterboard 19mm	5.70		No Insulation	Ceramic Tiles 8mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	13.20		No Insulation	Carpet 10mm
Bedroom 2/Garage	Timber Above Plasterboard 19mm	8.80		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	5.70	Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bedroom 4/Kitchen/Living	Timber Above Plasterboard 19mm	12.50		No Insulation	Carpet 10mm
Bedroom 4/WC	Timber Above Plasterboard 19mm	2.30		No Insulation	Carpet 10mm
Master Bedroom/FF Hallway	Timber Above Plasterboard 19mm	9.00		No Insulation	Carpet 10mm
Master Bedroom/Bedroom 3	Timber Above Plasterboard 19mm	4.10		No Insulation	Carpet 10mm
Master Bedroom/Bedroom 2	Timber Above Plasterboard 19mm	4.90		No Insulation	Carpet 10mm
Master Bedroom/Bedroom 4	Timber Above Plasterboard 19mm	8.40		No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ens/Bedroom 2	Timber Above Plasterboard 19mm	7.70		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R4	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
WC	Plasterboard	Bulk Insulation R4	No
WC	Timber Above Plasterboard	No Insulation	No
Garage	Plasterboard	Bulk Insulation R4	No
Garage	Timber Above Plasterboard	No Insulation	No
FF Hallway	Plasterboard	Bulk Insulation R4	No
FF Hallway	Timber Above Plasterboard	No Insulation	No
FF Bath	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Timber Above Plasterboard	No Insulation	No
Bedroom 4	Plasterboard	Bulk Insulation R4	No
Bedroom 4	Timber Above Plasterboard	No Insulation	No
Master Bedroom	Plasterboard	Bulk Insulation R2.5	No
Ens	Plasterboard	Bulk Insulation R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	40	Downlights - LED	450	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed
WC	2	Downlights - LED	450	Sealed
WC	1	Exhaust Fans	300	Sealed
Garage	8	Downlights - LED	450	Sealed
FF Hallway	10	Downlights - LED	450	Sealed
FF Bath	6	Downlights - LED	450	Sealed
FF Bath	1	Exhaust Fans	300	Sealed
Bedroom 3	8	Downlights - LED	450	Sealed
Bedroom 2	8	Downlights - LED	450	Sealed
Bedroom 4	8	Downlights - LED	450	Sealed
Master Bedroom	18	Downlights - LED	450	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ens	7	Downlights - LED	450	Sealed
Ens	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 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.
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