Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0005237888

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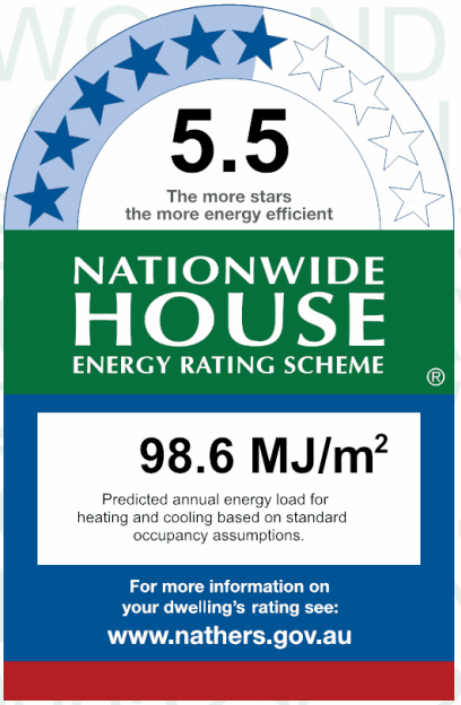

Property

Address	Unit 2, 23 Second Avenue , Kingswood , NSW , 2747
Lot/DP	530541
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	-
Prepared by	Morson Group Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	99.0	Suburban
Unconditioned*	24.0	**NatHERS climate zone**
Total	124.0	28
Garage	19.0	

Thermal performance

Heating	Cooling
44.4 MJ/m^2	54.2 MJ/m^2

Accredited assessor

Name	David Howard
Business name	Partners Energy Management
Email	david@partnersenergy.com.au
Phone	0421381005
Accreditation No.	20039

Assessor Accrediting Organisation

ABSA

Declaration of interest	The Assessor has provided design advice to the Applicant

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=jlIPsOGuT.
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

If carpet noted as floor covering it may be replaced with any type.
Due to non-current window library the glazing descriptions may not match actual products.
Only the U and SHGC values should be considered NOT the glazing description.
If downlights are used then they should be IC (Insulation Continuous) rated so that insulation may be laid over
the top of them and insulation does not have to have holes cut into it.

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-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-01 A	n/a	2100	2700	n/a	65	W	No
Kitchen/Living	ALM-004-01 A	n/a	1500	2000	n/a	45	E	No
Kitchen/Living	ALM-004-01 A	n/a	1500	2000	n/a	45	E	No
Kitchen/Living	ALM-004-01 A	n/a	1500	1000	n/a	45	S	No
Kitchen/Living	ALM-004-01 A	n/a	1500	1000	n/a	45	S	No
Bedroom 1	ALM-004-01 A	n/a	1500	2000	n/a	45	E	No
Bedroom 1	ALM-004-01 A	n/a	1500	1000	n/a	45	S	No
Ensuite Bed 1	ALM-004-01 A	n/a	1500	1000	n/a	45	S	No
Bathroom L1	ALM-004-01 A	n/a	1500	1000	n/a	45	S	No
Bedroom 2 SE	ALM-004-01 A	n/a	1500	1000	n/a	45	N	No
Bedroom 2 SE	ALM-004-01 A	n/a	1500	2000	n/a	45	E	No
Bedroom 3 NE	ALM-004-01 A	n/a	1500	2000	n/a	45	E	No
Bedroom 4 NW	ALM-004-01 A	n/a	750	1200	n/a	45	W	No
Hallway/Stairs	ALM-004-01 A	n/a	1500	1000	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	

* Refer to glossary.

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
Kitchen/Living	2100	820	90	S
Garage	2100	2400	90	E

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 R2.5	Yes
EW-2	Brick Veneer	0.50	Medium	Foil, Anti-glare one side, Reflective other	Yes
EW-3	Fibro Cavity Panel Direct Fix	0.30	Light	Anti-glare foil with bulk no gap R2.5	Yes
EW-4	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs G	EW-1	3000	2890	W	0	NO
Kitchen/Living	EW-1	3000	3795	W	0	NO
Kitchen/Living	EW-1	3000	6695	E	0	NO
Kitchen/Living	EW-1	3000	6200	S	1400	NO
Garage	EW-2	3000	3095	W	1200	NO
Garage	EW-2	3000	6200	N	9900	NO
Garage	EW-2	3000	3095	E	0	NO
Bedroom 1	EW-3	3000	3495	E	1000	NO
Bedroom 1	EW-3	3000	4295	S	975	NO
Ensuite Bed 1	EW-3	3000	1490	S	925	NO
Bathroom L1	EW-3	3000	3495	W	1000	NO
Bathroom L1	EW-3	3000	1595	S	925	NO
Bedroom 2 SE	EW-3	3000	1200	N	13400	YES
Bedroom 2 SE	EW-3	3000	3095	E	1000	NO
Bedroom 3 NE	EW-4	3000	3195	E	1700	YES
Bedroom 4 NW	EW-3	3000	1000	S	7600	YES
Bedroom 4 NW	EW-4	3000	3100	W	1000	NO
Hallway/Stairs	EW-3	3000	3190	W	1000	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		19.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		119.00	No insulation
IW-3 - Brick, plaster on studs		22.00	Bulk Insulation both sides of air gap R2.5

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs G	Concrete Slab on Ground 100mm	4.70	None	No Insulation	Carpet+Rubber Underlay 18mm
WC G	Concrete Slab on Ground 100mm	1.70	None	No Insulation	Ceramic Tiles 8mm
Laundry	Concrete Slab on Ground 100mm	1.50	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	32.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Garage	Concrete Slab on Ground 100mm	18.90	None	No Insulation	Bare
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 19mm	12.00		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 1	Suspended Timber Floor 19mm	4.10	Totally Open	Foil Both Sides of Bulk, Gap to Floor R1.5	Carpet+Rubber Underlay 18mm
Ensuite Bed 1/Kitchen/Living	Timber Above Plasterboard 19mm	3.50		No Insulation	Ceramic Tiles 8mm
Bathroom L1/Kitchen/Living	Timber Above Plasterboard 19mm	5.40		No Insulation	Ceramic Tiles 8mm
Bedroom 2 SE/Kitchen/Living	Timber Above Plasterboard 19mm	9.30		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2 SE	Suspended Timber Floor 19mm	3.60	Totally Open	Foil Both Sides of Bulk, Gap to Floor R1.5	Carpet+Rubber Underlay 18mm
Bedroom 3 NE/Garage	Timber Above Plasterboard 19mm	10.20		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Bedroom 4 NW/Garage	Timber Above Plasterboard 19mm	7.20		Bulk Insulation R2	Carpet+Rubber Underlay 18mm
Bedroom 4 NW	Suspended Timber Floor 19mm	3.00	Totally Open	Foil Both Sides of Bulk, Gap to Floor R1.5	Carpet+Rubber Underlay 18mm
Hallway/Stairs /Stairs G	Timber Above Plasterboard 19mm	4.80		No Insulation	Carpet+Rubber Underlay 18mm
Hallway/Stairs /WC G	Timber Above Plasterboard 19mm	1.90		No Insulation	Carpet+Rubber Underlay 18mm
Hallway/Stairs /Laundry	Timber Above Plasterboard 19mm	1.60		No Insulation	Carpet+Rubber Underlay 18mm
Hallway/Stairs /Kitchen/Living	Timber Above Plasterboard 19mm	1.20		No Insulation	Carpet+Rubber Underlay 18mm
Hallway/Stairs /Garage	Timber Above Plasterboard 19mm	1.20		Bulk Insulation R2	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs G	Timber Above Plasterboard	No Insulation	No
WC G	Timber Above Plasterboard	No Insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Garage	Timber Above Plasterboard	Bulk Insulation R2	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Ensuite Bed 1	Plasterboard	Bulk Insulation R3.5	No
Bathroom L1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2 SE	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3 NE	Plasterboard	Bulk Insulation R3.5	No
Bedroom 4 NW	Plasterboard	Bulk Insulation R3.5	No
Hallway/Stairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	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	Bulk, Reflective Side Down, No Air Gap Above 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.
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.