

Nationwide House Energy Rating Scheme NatHERS Certificate No. 0006412431

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Property

Address 120-134 Farm Road , Mulgoa , NSW ,
2745
Lot/DP 8/229785
NCC Class* 1A
Type New Dwelling

Plans

Main Plan Revision A - Issued on - 1.04.2021
Prepared by Pyramid Design Drafting

Construction and environment

Assessed floor area (m ² *)	Exposure Type
Conditioned*	Open
Unconditioned*	NatHERS climate zone
Total	28
Garage	

Accredited assessor

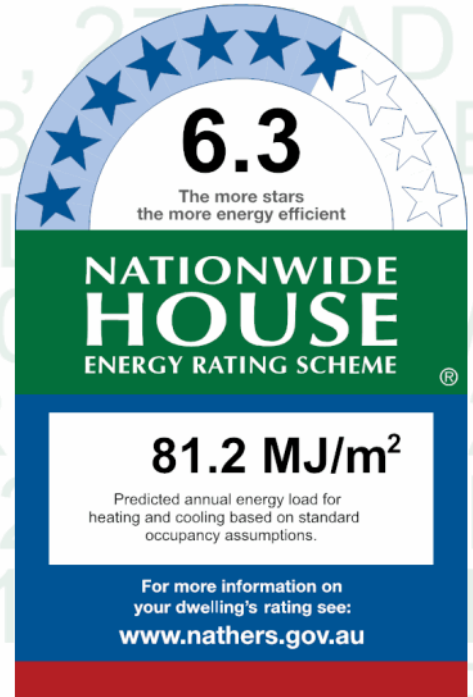
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Accreditation No. 10056
Assessor Accrediting Organisation
HERA
Declaration of interest None

National Construction Code (NCC) requirements

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

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

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



6.3
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

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

For more information on
your dwelling's rating see:
www.nathers.gov.au

Thermal performance

Heating	Cooling
55.4 MJ/m ²	25.8 MJ/m ²

About the rating

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

Verification

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

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

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

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-03 A	ALM-002-03 A Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60

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*
Foyer	ALM-002-03 A	n/a	2400	1000	n/a	00	W	No
Foyer	ALM-002-03 A	n/a	2400	1000	n/a	00	W	No
Foyer	ALM-002-01 A	n/a	943	3850	n/a	00	W	No
Kitchen/Living	ALM-002-01 A	n/a	3200	4800	n/a	65	E	No
Kitchen/Living	ALM-002-01 A	n/a	3200	2290	n/a	45	N	No
Kitchen/Living	ALM-002-01 A	n/a	3200	3800	n/a	90	E	No
Home Theatre	ALM-001-01 A	n/a	1200	3010	n/a	65	S	No
Games Room	ALM-001-01 A	n/a	2657	2410	n/a	40	E	No
Games Room	ALM-002-03 A	n/a	3200	3800	n/a	90	E	No
Games Room	ALM-002-03 A	n/a	3200	2290	n/a	45	S	No
Powder	ALM-001-01 A	n/a	2340	820	n/a	90	E	No
Master Bedroom	ALM-001-01 A	n/a	2000	970	n/a	65	N	No
Master Bedroom	ALM-001-01 A	n/a	2000	970	n/a	65	N	No
Laundry	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Laundry	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bedroom 2	ALM-001-01 A	n/a	2000	2410	n/a	45	W	No
Bedroom 3	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bedroom 3	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Study	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Study	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Lounge Room	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Lounge Room	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bath	ALM-001-01 A	n/a	2000	2410	n/a	45	W	No
Bedroom 4	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bedroom 4	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bedroom 5	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Bedroom 5	ALM-001-01 A	n/a	2000	970	n/a	65	W	No
Garage	ALM-001-01 A	n/a	2657	2410	n/a	40	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
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
Kitchen/Living	GEN-04-006a	n/a	50	3.10	E	None	No	0.50

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Foyer	2340	1840	90	W
Laundry	2340	820	90	E
Garage	2340	820	90	E
Garage	2572	5770	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	0.30	Light	Anti-glare foil with bulk no gap R2.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Foyer	EW-1	3775	4190	W	11100	YES
Kitchen/Living	EW-1	3775	200	S	12900	YES
Kitchen/Living	EW-1	3775	295	E	7200	YES
Kitchen/Living	EW-1	3775	4795	E	9300	YES
Kitchen/Living	EW-1	3775	2300	N	0	YES

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	3775	3800	E	7000	NO
Home Theatre	EW-1	3775	4395	S	500	YES
Games Room	EW-1	3775	4595	E	500	YES
Games Room	EW-1	3775	200	N	12800	YES
Games Room	EW-1	3775	3900	E	7000	NO
Games Room	EW-1	3775	2300	S	0	YES
Powder	EW-1	3775	1990	E	500	NO
Master Bedroom	EW-1	3775	5090	N	500	YES
WIR	EW-1	3775	5695	E	500	NO
WIR	EW-1	3775	2000	W	500	YES
WIR	EW-1	3775	4200	N	500	NO
Laundry	EW-1	3775	3395	E	500	YES
Laundry	EW-1	3775	4095	W	500	YES
Laundry	EW-1	3775	5200	N	500	NO
Bedroom 2	EW-1	3775	1300	S	0	YES
Bedroom 2	EW-1	3775	5000	W	1800	NO
Bedroom 2	EW-1	3775	2100	N	6000	YES
Bedroom 3	EW-1	3775	4195	W	1800	YES
Bedroom 3	EW-1	3775	900	N	4600	YES
Study	EW-1	3775	600	S	19700	YES
Study	EW-1	3775	4595	W	1800	YES
Lounge Room	EW-1	3775	600	N	19800	YES
Lounge Room	EW-1	3775	5295	W	1800	YES
Bath	EW-1	3775	2000	S	6400	YES
Bath	EW-1	3775	3800	W	1800	NO
Bath	EW-1	3775	1300	N	0	YES
Bedroom 4	EW-1	3775	5100	S	600	NO
Bedroom 4	EW-1	3775	3995	W	500	YES
Bedroom 4	EW-1	3775	3395	E	500	YES
Bedroom 5	EW-1	3775	1000	S	4600	YES
Bedroom 5	EW-1	3775	4695	W	1800	YES
Garage	EW-1	3775	12095	E	500	NO
Garage	EW-1	3775	6900	S	500	NO
Garage	EW-1	3775	2100	W	500	YES
Ensuite	EW-1	3775	1895	N	500	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		678.00	Bulk Insulation, No Air Gap R2.7

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Foyer	Waffle pod slab 175 mm 100mm	17.90	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Hallway	Waffle pod slab 175 mm 100mm	60.70	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Kitchen/Living	Waffle pod slab 175 mm 100mm	132.90	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Butlers	Waffle pod slab 175 mm 100mm	12.70	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Home Theatre	Waffle pod slab 175 mm 100mm	31.80	None	Waffle Pod 175mm	Carpet 10mm
Games Room	Waffle pod slab 175 mm 100mm	46.50	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Powder	Waffle pod slab 175 mm 100mm	7.90	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Master Bedroom	Waffle pod slab 175 mm 100mm	28.30	None	Waffle Pod 175mm	Carpet 10mm
WIR	Waffle pod slab 175 mm 100mm	23.60	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Laundry	Waffle pod slab 175 mm 100mm	20.80	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Bedroom 2	Waffle pod slab 175 mm 100mm	21.20	None	Waffle Pod 175mm	Carpet 10mm
Bedroom 3	Waffle pod slab 175 mm 100mm	19.50	None	Waffle Pod 175mm	Carpet 10mm
WIL	Waffle pod slab 175 mm 100mm	5.60	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Study	Waffle pod slab 175 mm 100mm	22.40	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Lounge Room	Waffle pod slab 175 mm 100mm	25.80	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Bath	Waffle pod slab 175 mm 100mm	20.00	None	Waffle Pod 175mm	Ceramic Tiles 8mm
Bedroom 4	Waffle pod slab 175 mm 100mm	20.00	None	Waffle Pod 175mm	Carpet 10mm
Bedroom 5	Waffle pod slab 175 mm 100mm	20.10	None	Waffle Pod 175mm	Carpet 10mm
Garage	Waffle pod slab 175 mm 100mm	82.70	None	Waffle Pod 175mm	Bare
Ensuite	Waffle pod slab 175 mm 100mm	11.90	None	Waffle Pod 175mm	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Foyer	Plasterboard	Bulk Insulation R6	No
Hallway	Plasterboard	Bulk Insulation R6	No
Kitchen/Living	Plasterboard	Bulk Insulation R6	No
Butlers	Plasterboard	Bulk Insulation R6	No
Home Theatre	Plasterboard	Bulk Insulation R6	No
Games Room	Plasterboard	Bulk Insulation R6	No
Powder	Plasterboard	Bulk Insulation R6	No
Master Bedroom	Plasterboard	Bulk Insulation R6	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
WIR	Plasterboard	Bulk Insulation R6	No
Laundry	Plasterboard	Bulk Insulation R6	No
Bedroom 2	Plasterboard	Bulk Insulation R6	No
Bedroom 3	Plasterboard	Bulk Insulation R6	No
WIL	Plasterboard	Bulk Insulation R6	No
Study	Plasterboard	Bulk Insulation R6	No
Lounge Room	Plasterboard	Bulk Insulation R6	No
Bath	Plasterboard	Bulk Insulation R6	No
Bedroom 4	Plasterboard	Bulk Insulation R6	No
Bedroom 5	Plasterboard	Bulk Insulation R6	No
Garage	Plasterboard	Bulk Insulation R6	No
Ensuite	Plasterboard	Bulk Insulation R6	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, No Gap, Reflective Side Down, Anti-glare Up	0.85	Dark

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