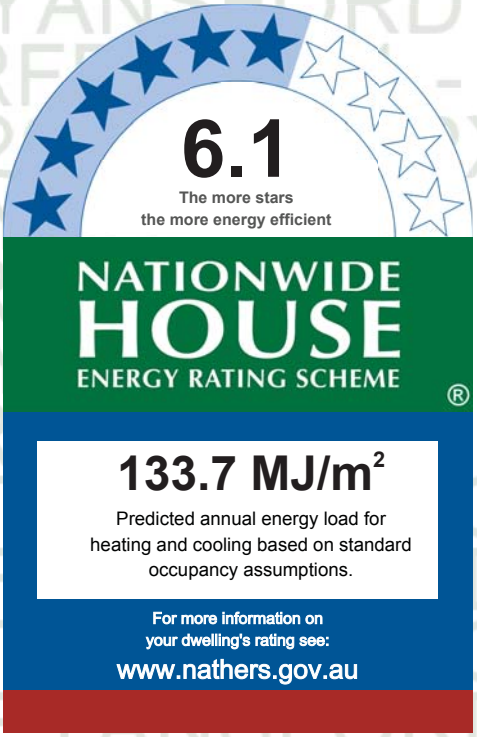
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 4AJSPXRFR0

FirstRate5: 5.3.1 (3.21)



Property

Address

Lot/DP

NCC Class* Class 1a

Type New Home

Plans

Main plan 29/03/2021

Prepared by T.M.

Construction and environment

Assessed floor area (m²)*	
Conditioned*	160.4
Unconditioned*	53.1
Total	213.5
Garage	35.9

Exposure type

suburban

NatHERS climate zone

Thermal performance

Heating	**Cooling**
101.3 MJ/m²	**32.4** MJ/m²

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.

Accredited assessor

Name

Business name Energy Rating Melbourne

Email

Phone 0412 690 537

Accreditation No.

Assessor Accrediting Organisation

DMN

Declaration of interest Declared, refer to "Additional Notes" on page 2

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=4AJSPXRFR0 When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

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

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

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

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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

*Employed by the designer of the building

*Refer to Tarawill Building Design Energy Rating Specification Report

Insulation requirements:

-Proposed concrete waffle slab

-R2.0 glass fibre batt insulation in all external brick veneer walls plus sis (ground floor)

-R2.0 glass fibre batt insulation in all external clad walls plus sis (ground floor)

-R2.0 glass fibre batt insulation in all internal garage stud walls (ground floor)

-R4.0 glass fibre batt insulation to be provided in all ceiling areas

-Aluminium single and double glazed windows/sliding door units to be provided as per report

*The building materials listed in the report is the minimum requirement to achieve the necessary star rating. All State, Territory & Federal building standards and regulations must be adhered to.

*All insulation is to be supplied and installed as per the relevant Australian Standards.

*(NCC 2016: V2, BCA- Victoria) In the case of any new Class 1 building, it must either be supplied with a rainwater tank connected to all sanitary flushing systems or a solar hot water heater system be provided.

*(NCC 2016: V2, BCA) This Thermal Performance Assessment meets the 6 Star Rating required as laid out in the NCC 2016, BCA V2, Class 1 and Class 10 Buildings.

*Glazing and doors sizes as nominated must not be amended or increased as it may result in an alternate result to the report provided. Where window or door sizes are to be amended an amended report is to be requested.

*Total System "U-Value"- The glass windows and/or glass doors supplied must equal and/or can be of lesser value than the "U-Values" nominated in this report. Note: only a +/-5% SHGC Tolerance is allowed with this rating.

*Total System "SHGC"- The glass windows and/or glass doors supplied should not be reduced or increased (5% variance is acceptable) than the Total System "SHGC" Values listed in this report.

*If there is any amendment or change of detail to the design of the project assessed, this report will become invalid and a re-assessment will be required to meet the minimum star rating required and additional fees to re-issue the report and stamped plans will be applicable.

*All exhaust fans and downlights that penetrate the ceiling must be sealed. Self closing dampers to be provided to all exhaust fans. All roof lights must be sealed or capable of being sealed.

*Rips, tears and penetrations through Sisalation, Reflective Foils and Insulation Wraps must be repaired and sealed.

*All external windows and doors are to be fitted with weather strips.

*All chimneys and flues to be fitted with self closing dampers.

*Proposed manholes is to have insulation installed/laid over to ensure a continuous layer of insulation. No ceiling penetrations have been nominated or allowed for or entered as information to this report.

*Insulation batts and blankets must not be flattened or compressed when being installed and any voids are to be filled.

Acceptable Construction Practice 3.12.1.1: Building fabric thermal insulation

(a) Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it-

(i) abuts or overlaps adjoining insulation other than at supporting members such as columns, studs, noggings, joists, furring channels and the like where the insulation must butt against themember; and (ii)forms a continuous barrier with ceilings, walls, bulk heads, floors or the like that inherently contribute to the thermal barrier; and

(b) Where required, reflective insulation must be installed with-

(i) the necessary air space, to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and

(ii) the reflective insulation closely fitted against any penetration, door or window opening; and

(iii) the reflective insulation adequately supported by framing members; and

(iv) each adjoining sheet of roll membrane being- (A) overlapped not less than 150mm; or (B) taped together

(c) Where required, bulk insulation must be installed so that-

(i) it maintains its position and thickness, other than where it crosses roof battens, waterpipes, electrical cabling or the like; and

(ii) in a ceiling, where there is no bulk insulation or reflective insulation in the external wall beneath, it overlaps the external wall by not less than 50mm

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

				Substitution tolerance ranges	
Window ID	**Window description**	**Maximum U-value***	**SHGC***	SHGC lower limit	SHGC upper limit
A&L-002-04 A	Georgian Awning Window SG 4Clr	5.71	0.58	0.55	0.61
A&L-013-01 A	Al Sliding Door DG 4/10/4	3.65	0.63	0.6	0.66
A&L-028-01 A	Al Boutique French Door Open in SG 4Clr	5.72	0.57	0.54	0.6

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 2	A&L-002-04 A	W5 Bed 2	2100	1940	awning	30.0	SW	No
Bed 3	A&L-002-04 A	W2 Bed 3	2100	2099	awning	30.0	SW	No
Bed 4	A&L-002-04 A	W8 Bed 4	1200	2110	awning	45.0	NE	No
Bed 1	A&L-013-01 A	D7 Bed 1	2100	3570	sliding	60.0	NE	No
Bed 1	A&L-002-04 A	W9 Bed 1	600	2110	awning	45.0	NW	No
Bed 1 WIR	A&L-002-04 A	W1 WIR	2100	850	awning	60.0	SW	No
Bed 1 Ensuite	A&L-002-04 A	W10 Ensuite-Bed 1	900	850	awning	90.0	NE	No
Bed 1 Ensuite	A&L-002-04 A	W11 Ensuite	2100	1800	awning	20.0	NW	No
WC	A&L-002-04 A	W3 WC	900	610	awning	90.0	SW	No
Bathroom	A&L-002-04 A	W4 Bathroom	1200	1450	awning	45.0	SW	No
Laundry	A&L-028-01 A	Opening 38	2100	820	casement	90.0	SE	No
Laundry	A&L-002-04 A	W6 Laundry	900	610	awning	90.0	SE	No
Pantry	A&L-002-04 A	W7 Pantry	600	1210	fixed	0.0	SE	No
Kitchen Dining Family	A&L-013-01 A	D6 Dining/Family	2100	3570	sliding	60.0	NW	No
Kitchen Dining Family	A&L-013-01 A	D4 Kitchen	2100	3570	sliding	60.0	NE	No
Kitchen Dining Family	A&L-013-01 A	D5 Dining	2100	3570	sliding	60.0	NE	No

Roof window *type and performance value*

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 %	Area (m²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-003a	TUBE: Tubular

* Refer to glossary.

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
Study	GEN-04-003a	Element 1	1000	0.1	N	None	No	0.75

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2130	4800	100.0	SW
Garage	2100	820	100.0	NE
Entry	2100	820	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Brick Veneer	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No
2	FR5 - Double Brick	0.5	Medium		No
3	FR5 - Fibro Clad Framed	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	1	2640	426	SW	2759	Yes
Garage	2	2640	5566	SW	520	Yes
Garage	1	2640	5985	SE	0	No
Garage	1	2640	1285	NE	0	Yes
Bed 2	3	2550	3026	SW	548	No
Bed 2	3	2550	588	SW	1268	No
Bed 2	3	2550	1623	SE	2055	Yes
Bed 3	3	2550	3613	SW	532	No
Bed 4	1	2550	4197	NE	0	Yes
Bed 1	1	2550	956	SE	0	Yes
Bed 1	1	2550	4123	NE	0	No
Bed 1	1	2550	3386	NW	0	Yes
Bed 1 WIR	3	2550	640	NW	540	Yes
Bed 1 WIR	3	2550	1777	SW	540	No
Bed 1 Ensuite	3	2550	1486	NE	0	Yes
Bed 1 Ensuite	3	2550	4213	NW	540	No
Bed 1 Ensuite	3	2550	2275	SW	540	Yes
WC	3	2550	974	SW	515	No
Bathroom	3	2550	2105	SW	507	No
Laundry	1	2550	3903	SE	0	Yes
Pantry	1	2550	2197	NE	0	No

* Refer to glossary.

Generated on 22 Apr 2021 using FirstRate5: 5.3.1 (3.21)

Pantry	1	2550	1993	SE	0	Yes
Entry	3	2550	1377	SW	2904	Yes
Kitchen Dining Family	1	2550	6458	NW	0	Yes
Kitchen Dining Family	1	2550	8715	NE	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	169.3	
2	FR5 - Internal Plasterboard Stud Wall	27	Glass fibre batt: R2.0 (R2.0)

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	35.9	Enclosed	R0.0	none
Bed 2	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	11.1	Enclosed	R0.0	Carpet
Bed 3	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	11.2	Enclosed	R0.0	Carpet
Bed 4	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	12.6	Enclosed	R0.0	Carpet
Bed 1	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	20	Enclosed	R0.0	Carpet
Bed 1 WIR	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	5.5	Enclosed	R0.0	Carpet
Bed 1 Ensuite	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	9.4	Enclosed	R0.0	Tiles
WC	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	1.9	Enclosed	R0.0	Tiles
Bathroom	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	6.6	Enclosed	R0.0	Tiles
Study	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	5.6	Enclosed	R0.0	Carpet
Powder Room	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	2.7	Enclosed	R0.0	Tiles
Laundry	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	8.7	Enclosed	R0.0	Tiles
Pantry	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	4.4	Enclosed	R0.0	Timber
Entry	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	18.1	Enclosed	R0.0	Timber
Kitchen Dining Family	FR5 - 175mm waffle pod, 100mm concrete (R0.57)	59.8	Enclosed	R0.0	Timber

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*

* Refer to glossary.

Generated on 22 Apr 2021 using FirstRate5: 5.3.1 (3.21)

Garage	Plasterboard	R4.0	Yes
Bed 2	Plasterboard	R4.0	Yes
Bed 3	Plasterboard	R4.0	Yes
Bed 4	Plasterboard	R4.0	Yes
Bed 1	Plasterboard	R4.0	Yes
Bed 1 WIR	Plasterboard	R4.0	Yes
Bed 1 Ensuite	Plasterboard	R4.0	Yes
WC	Plasterboard	R4.0	Yes
Bathroom	Plasterboard	R4.0	Yes
Study	Plasterboard	R4.0	Yes
Powder Room	Plasterboard	R4.0	Yes
Laundry	Plasterboard	R4.0	Yes
Pantry	Plasterboard	R4.0	Yes
Entry	Plasterboard	R4.0	Yes
Kitchen Dining Family	Plasterboard	R4.0	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 1	2	Downlights	90	Sealed
Bed 1 Ensuite	1	Exhaust Fans	250	Sealed
Bed 1 Ensuite	1	Downlights	90	Sealed
Bathroom	1	Exhaust Fans	250	Sealed
Powder Room	1	Exhaust Fans	250	Sealed
Entry	4	Downlights	90	Sealed
Kitchen Dining Family	1	Exhaust Fans	150	Sealed
Kitchen Dining Family	8	Downlights	90	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Cont:Attic-Continuous	0.0	0.5	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 NatHERSAdministrator. 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).