Building Thermal Performance Assessors
A.B.N: 34 83 54 36 737
13/103 Atherton Road, Oakleigh Vic 3166
Phone: 0492836228
Email: admin@energyratinggroup.com.au
www.energyratinggroup.com.au

EnergyRatingGroup

SUMMARY OF REPORT

CLIENT:	Mr Jim Petratos	**Date:**	30/05/2022
PLANS BY:	Profectus Design		
PLANS JOB No.:	020322	**REF No.:**	ERG347

RATED ADDRESS	LOT \ UNIT NO.	STAR RATING
286 William Street, Kingsgrove NSW 2208	Unit A Unit B	**5.6** **6.3**

FLOOR DETAILS	
Concrete slab on ground:	**No insulation required**
Timber First Floor between levels:	**No insulation required**
Timber First Floor above Garage:	**R2.5 insulation required**
WALL DETAILS	
Brick Veneer walls:	**R2.5 insulation plus 1 breathable wrap**
Internal Party Walls between Dwellings:	**R2.5 insulation required**
Internal walls between garage & dwelling:	**R2.5 insulation required**
External Garage Walls:	**No insulation required**
ROOF & CEILING DETAILS	
Metal Roof:	**R5.0 insulation plus 1 single sided foil**
External Garage Roof:	**No insulation required**
WINDOWS, GLAZING	
FRAMES:	**Aluminium Frames**
GLAZING:	**Unit A & B:** **All Windows to be Single Glazed** **with U-Value=5.40, SHGC=0.58** *U Value to be equal or less & SHGC can be within 5%*

AIR LEAKAGE

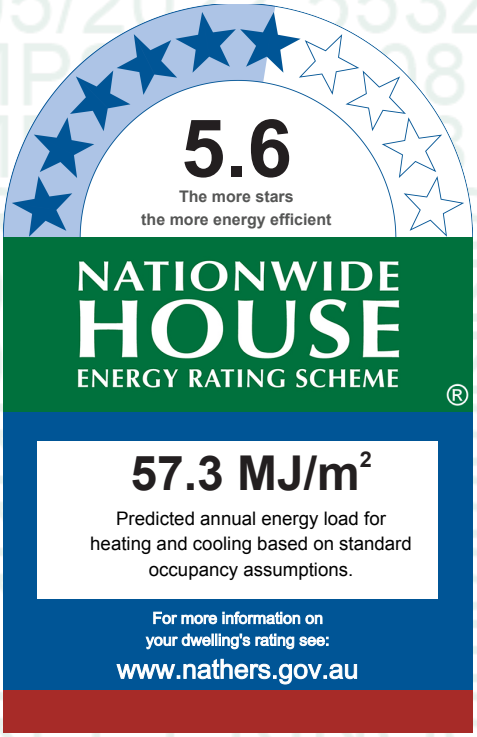
- Exhaust fans to be sealed.
- Windows and sliding doors are fitted with weather seals.
- External doors to be weather stripped.
- Gaps & Cracks around doors, windows and service penetrations are sealed.
- All other: as per energy report and plans.

LIGHTING

The lamp illumination power density or artificial lighting not to exceed:
•In Class 1 building (within the building), 5W/sqm
•On a verandah or balcony attached to the class 1 4W/sqm
•In a class 10 building (Garage, Shed…) 3W/sqm

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 553ZKMPSLD

Generated on 30 May 2022 using FirstRate5: 5.3.2a (3.21)



Property

Address	A, 286 William Street, Kingsgrove, NSW, 2208
Lot/DP	68/22360
NCC Class*	Class 1a
Type	New Home

Plans

Main plan	020322
Prepared by	Profectus Design

Construction and environment

Assessed floor area (m²)*		**Exposure type**
Conditioned*	127.6	suburban
Unconditioned*	35.4	**NatHERS climate zone**
Total	163	56 Mascot AMO
Garage	23	

Thermal performance

Heating	Cooling
33.6 MJ/m²	**23.7** 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	Marios Kardaris
Business name	Energy Rating Group
Email	admin@energyratinggroup.com.au
Phone	0492836228
Accreditation No.	HERA10132
Assessor Accrediting Organisation	HERA
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=553ZKMPSLD 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.

* 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

FLOOR DETAILS

Concrete slab on ground: No insulation required

Timber First Floor between levels: No insulation required

Timber First Floor above Garage: R2.5 insulation required

WALL DETAILS

Brick Veneer walls: R2.5 insulation plus 1 breathable wrap

Internal Party Walls between Dwellings: R2.5 insulation required

Internal walls between garage & dwelling: R2.5 insulation required

External Garage Walls: No insulation required

ROOF & CEILING DETAILS

Metal Roof: R5.0 insulation plus 1 single sided foil

External Garage Roof: No insulation required

FRAMES: Aluminium Frames

Unit A:

All Windows to be Single Glazed

with U-Value=5.40, SHGC=0.58

U Value to be equal or less & SHGC can be within 5%

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	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61

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*
Pdr	ALM-002-03 A	WA.03	900	750	sliding	45.0	WSW	No
Kitchen/Dining/-Living	ALM-002-03 A	DA.03	2400	1750	sliding	45.0	SSE	No
Kitchen/Dining/-Living	ALM-002-03 A	DA.04	2400	3085	sliding	30.0	SSE	No
Kitchen/Dining/-Living	ALM-002-03 A	WA.01	1200	1810	sliding	45.0	WSW	No
Kitchen/Dining/-Living	ALM-002-03 A	WA.02	1800	850	double_hung	45.0	WSW	No
Entry/Stairs	ALM-002-03 A	DA.02	2375	920	casement	90.0	NNW	No
Entry/Stairs	ALM-002-03 A	DA.02 Sidelight	2700	1230	fixed	0.0	NNW	No
Bed 3	ALM-002-03 A	WA.04	900	1810	sliding	10.0	SSE	No
Bed 3	ALM-002-03 A	WA.05	1500	700	awning	20.0	SSE	No
Bed 2	ALM-002-03 A	WA.06	900	1810	sliding	10.0	WSW	No
Bath	ALM-002-03 A	WA.07	900	1210	sliding	45.0	WSW	No
Ens	ALM-002-03 A	WA.08	1500	700	awning	90.0	WSW	No
Master Bed 1	ALM-002-03 A	DA.06	2400	2410	sliding	45.0	NNW	No
Master Bed 1	ALM-002-03 A	WA.09	900	2410	sliding	10.0	WSW	No
Void/Stairs	ALM-002-03 A	WA.10	2700	2200	fixed	0.0	NNW	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					

* Refer to glossary.

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
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2310	2400	100.0	NNW
Ldry	2040	820	100.0	WSW

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		No
2	mw - Stone with Brick Veneer	0.5	Medium		No
3	FR5 - Brick Veneer	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	Yes
4	PW - Brick Party Wall 1 Layer Insulation	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	Yes
5	mw - Rendered Brick Veneer	0.3	Light	Glass fibre batt: R2.5 (R2.5)	Yes
6	PW - Parti Wall	0.5	Medium	Glass fibre batt: R2.5 (R2.5);Glass fibre batt: R2.5 (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)
Garage	1	2700	1260	SSE	0	Yes
Garage	2	2700	2024	ENE	0	Yes
Garage	2	2700	3837	NNW	0	No
Garage	2	2700	1421	WSW	0	Yes
Garage	1	2700	4579	WSW	0	Yes
Pdr	3	2700	1591	WSW	0	Yes
Ldry	3	2700	1591	WSW	0	Yes
Kitchen/Dining/Living	3	2700	5841	SSE	3630	Yes
Kitchen/Dining/Living	4	2700	8239	ENE	0	No

* Refer to glossary.

Kitchen/Dining/Living	3	2700	744	NNW	0	Yes
Kitchen/Dining/Living	3	2700	8239	WSW	430	Yes
Entry/Stairs	4	2700	7352	ENE	0	No
Entry/Stairs	1	2700	2388	NNW	1248	Yes
Bed 3	5	2700	5118	SSE	0	Yes
Bed 3	6	2700	3007	ENE	0	No
Bed 3	5	2700	3007	WSW	698	Yes
Bed 2	5	2700	3012	WSW	690	Yes
Bath	5	2700	1380	WSW	698	Yes
Ens	5	2700	1368	WSW	0	Yes
Wir	5	2700	1993	WSW	0	Yes
Master Bed 1	3	2700	3990	NNW	0	Yes
Master Bed 1	3	2700	3860	WSW	0	Yes
Master Bed 1	3	2700	1243	SSE	0	Yes
Hallway	6	2700	7192	ENE	0	No
Void/Stairs	6	2700	4935	ENE	0	No
Void/Stairs	3	2700	2249	NNW	1116	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	17.3	Glass fibre batt: R2.5 (R2.5)
2	FR5 - Internal Plasterboard Stud Wall	120.1	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FR5 - CSOG: Slab on Ground	7.9	Enclosed	R0.0	none
Garage	FR5 - CSOG: Slab on Ground	15.1	Enclosed	R0.0	none
Pdr	FR5 - CSOG: Slab on Ground	2.3	Enclosed	R0.0	Tiles
Ldry	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Tiles
Kitchen/Dining/L-iving	FR5 - CSOG: Slab on Ground	41.1	Enclosed	R0.0	Timber
Kitchen/Dining/L-iving	FR5 - CSOG: Slab on Ground	7	Enclosed	R0.0	Timber
Entry/Stairs	FR5 - CSOG: Slab on Ground	18.8	Enclosed	R0.0	Timber
Bed 3	NF - Particleboard Floors	15.4	Enclosed	R0.0	Timber
Bed 2	NF - Particleboard Floors	11.8	Enclosed	R0.0	Timber
Bath	NF - Particleboard Floors	5.4	Enclosed	R0.0	Tiles
Ens	NF - Particleboard Floors	4.7	Enclosed	R0.0	Tiles
Wir	NF - Particleboard Floors	3.1	Enclosed	R0.0	Timber
Master Bed 1	NF - Particleboard Floors	17.7	Enclosed	R2.5	Timber
Hallway	NF - Particleboard Floors	9.8	Enclosed	R0.0	Timber
Void/Stairs	No Floor	11.1	Enclosed	R0.0	No Floor

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	R0.0	No
Garage	NF - Particleboard Floors	R2.5	No
Pdr	NF - Particleboard Floors	R0.0	No
Ldry	NF - Particleboard Floors	R0.0	No
Ldry	NF - Particleboard Floors	R2.5	No
Kitchen/Dining/L-iving	NF - Particleboard Floors	R0.0	No
Kitchen/Dining/L-iving	Plasterboard	R5.0	No
Entry/Stairs	NF - Particleboard Floors	R0.0	No
Entry/Stairs	NF - Particleboard Floors	R2.5	No
Bed 3	Plasterboard	R5.0	No
Bed 2	Plasterboard	R5.0	No
Bath	Plasterboard	R5.0	No
Ens	Plasterboard	R5.0	No
Wir	Plasterboard	R5.0	No
Master Bed 1	Plasterboard	R5.0	No
Hallway	Plasterboard	R5.0	No
Void/Stairs	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Dining/Living	1	Exhaust Fans	150	Sealed
Bath	1	Exhaust Fans	200	Sealed
Ens	1	Exhaust Fans	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Framed:Flat - Flat Framed (Metal Deck)	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.

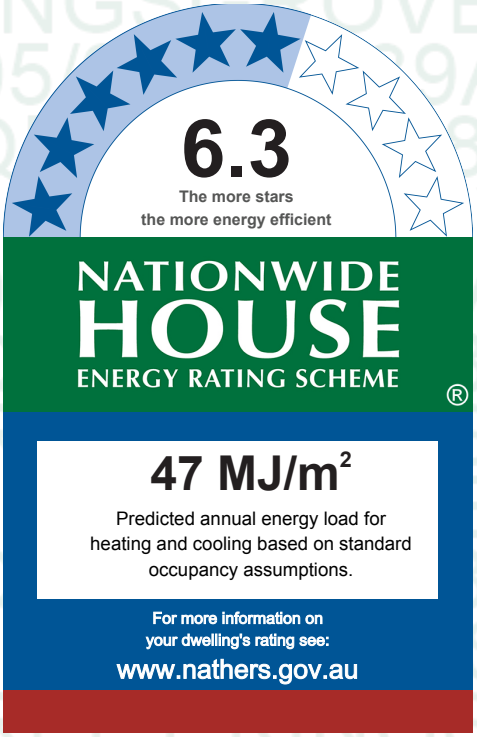
Glossary

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. A39ATQDQD1

Generated on 30 May 2022 using FirstRate5: 5.3.2a (3.21)



Property

Address	B, 286 William Street, Kingsgrove, NSW, 2208
Lot/DP	68/22360
NCC Class*	Class 1a
Type	New Home

Plans

Main plan	020322
Prepared by	Profectus Design

Construction and environment

Assessed floor area (m²)*	
Conditioned*	127.6
Unconditioned*	35.4
Total	163
Garage	23

Exposure type
suburban

NatHERS climate zone
56 Mascot AMO

Thermal performance

Heating	**Cooling**
27 MJ/m²	**20** 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	Marios Kardaris
Business name	Energy Rating Group
Email	admin@energyratinggroup.com.au
Phone	0492836228
Accreditation No.	HERA10132
Assessor Accrediting Organisation	HERA
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=A39ATQDQD1 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.

* 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

FLOOR DETAILS

Concrete slab on ground: No insulation required

Timber First Floor between levels: No insulation required

Timber First Floor above Garage: R2.5 insulation required

WALL DETAILS

Brick Veneer walls: R2.5 insulation plus 1 breathable wrap

Internal Party Walls between Dwellings: R2.5 insulation required

Internal walls between garage & dwelling: R2.5 insulation required

External Garage Walls: No insulation required

ROOF & CEILING DETAILS

Metal Roof: R5.0 insulation plus 1 single sided foil

External Garage Roof: No insulation required

FRAMES: Aluminium Frames

Unit B:

All Windows to be Single Glazed

with U-Value=5.40, SHGC=0.58

U Value to be equal or less & SHGC can be within 5%

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	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61

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*
Pdr	ALM-002-03 A	WB.01	900	750	sliding	45.0	ENE	No
Kitchen/Dining/-Living	ALM-002-03 A	WB.03	1200	1810	sliding	45.0	ENE	No
Kitchen/Dining/-Living	ALM-002-03 A	WB.02	1800	850	double_hung	45.0	ENE	No
Kitchen/Dining/-Living	ALM-002-03 A	DB.05	2400	1750	sliding	45.0	SSE	No
Kitchen/Dining/-Living	ALM-002-03 A	DB.04	2400	3085	sliding	30.0	SSE	No
Entry/Stairs	ALM-002-03 A	DB.01	2375	925	casement	90.0	NNW	No
Entry/Stairs	ALM-002-03 A	DB.01 Sidelight	2700	1230	fixed	0.0	NNW	No
Bed 3	ALM-002-03 A	WB.09	900	1810	sliding	10.0	SSE	No
Bed 3	ALM-002-03 A	WB.08	1500	700	awning	20.0	SSE	No
Bed 2	ALM-002-03 A	WB.07	900	1810	sliding	10.0	ENE	No
Bath	ALM-002-03 A	WB.06	900	1210	sliding	45.0	ENE	No
Ens	ALM-002-03 A	WB.05	1500	700	awning	90.0	ENE	No
Master Bed 1	ALM-002-03 A	WB.04	900	2410	sliding	10.0	ENE	No
Master Bed 1	ALM-002-03 A	DB.06	2400	2410	sliding	45.0	NNW	No
Void/Stairs	ALM-002-03 A	WB.10	2700	2200	fixed	0.0	NNW	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					

* Refer to glossary.

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
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2310	2400	100.0	NNW
Ldry	2040	820	100.0	ENE

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		No
2	mw - Stone with Brick Veneer	0.5	Medium		No
3	FR5 - Brick Veneer	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	Yes
4	PW - Brick Party Wall 1 Layer Insulation	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	Yes
5	mw - Rendered Brick Veneer	0.3	Light	Glass fibre batt: R2.5 (R2.5)	Yes
6	PW - Parti Wall	0.5	Medium	Glass fibre batt: R2.5 (R2.5);Glass fibre batt: R2.5 (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)
Garage	1	2700	4579	ENE	0	Yes
Garage	2	2700	1421	ENE	0	Yes
Garage	2	2700	3837	NNW	0	No
Garage	2	2700	2024	WSW	0	Yes
Garage	1	2700	1260	SSE	0	Yes
Pdr	3	2700	1591	ENE	0	Yes
Ldry	3	2700	1591	ENE	0	Yes
Kitchen/Dining/Living	3	2700	8239	ENE	430	Yes
Kitchen/Dining/Living	3	2700	744	NNW	0	Yes

* Refer to glossary.

Kitchen/Dining/Living	4	2700	8239	WSW	0	No
Kitchen/Dining/Living	3	2700	5841	SSE	3630	Yes
Entry/Stairs	1	2700	2388	NNW	1248	Yes
Entry/Stairs	4	2700	7352	WSW	0	No
Bed 3	5	2700	3007	ENE	698	Yes
Bed 3	6	2700	3007	WSW	0	No
Bed 3	5	2700	5118	SSE	0	No
Bed 2	5	2700	3012	ENE	690	Yes
Bath	5	2700	1380	ENE	698	Yes
Ens	5	2700	1368	ENE	0	Yes
Wir	5	2700	1993	ENE	0	Yes
Master Bed 1	3	2700	1243	SSE	0	Yes
Master Bed 1	3	2700	3860	ENE	0	No
Master Bed 1	3	2700	3990	NNW	0	Yes
Hallway	6	2700	7192	WSW	0	No
Void/Stairs	3	2700	2249	NNW	1116	Yes
Void/Stairs	6	2700	4935	WSW	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	17.3	Glass fibre batt: R2.5 (R2.5)
2	FR5 - Internal Plasterboard Stud Wall	120.1	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FR5 - CSOG: Slab on Ground	7.9	Enclosed	R0.0	none
Garage	FR5 - CSOG: Slab on Ground	15.1	Enclosed	R0.0	none
Pdr	FR5 - CSOG: Slab on Ground	2.3	Enclosed	R0.0	Tiles
Ldry	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Tiles
Kitchen/Dining/L-iving	FR5 - CSOG: Slab on Ground	41.1	Enclosed	R0.0	Timber
Kitchen/Dining/L-iving	FR5 - CSOG: Slab on Ground	7	Enclosed	R0.0	Timber
Entry/Stairs	FR5 - CSOG: Slab on Ground	18.8	Enclosed	R0.0	Timber
Bed 3	NF - Particleboard Floors	15.4	Enclosed	R0.0	Timber
Bed 2	NF - Particleboard Floors	11.8	Enclosed	R0.0	Timber
Bath	NF - Particleboard Floors	5.4	Enclosed	R0.0	Tiles
Ens	NF - Particleboard Floors	4.7	Enclosed	R0.0	Tiles
Wir	NF - Particleboard Floors	3.1	Enclosed	R0.0	Timber
Master Bed 1	NF - Particleboard Floors	17.7	Enclosed	R2.5	Timber
Hallway	NF - Particleboard Floors	9.8	Enclosed	R0.0	Timber
Void/Stairs	No Floor	11.1	Enclosed	R0.0	No Floor

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	R0.0	No
Garage	NF - Particleboard Floors	R2.5	No
Pdr	NF - Particleboard Floors	R0.0	No
Ldry	NF - Particleboard Floors	R0.0	No
Ldry	NF - Particleboard Floors	R2.5	No
Kitchen/Dining/L-iving	NF - Particleboard Floors	R0.0	No
Kitchen/Dining/L-iving	Plasterboard	R5.0	No
Entry/Stairs	NF - Particleboard Floors	R0.0	No
Entry/Stairs	NF - Particleboard Floors	R2.5	No
Bed 3	Plasterboard	R5.0	No
Bed 2	Plasterboard	R5.0	No
Bath	Plasterboard	R5.0	No
Ens	Plasterboard	R5.0	No
Wir	Plasterboard	R5.0	No
Master Bed 1	Plasterboard	R5.0	No
Hallway	Plasterboard	R5.0	No
Void/Stairs	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Dining/Living	1	Exhaust Fans	150	Sealed
Bath	1	Exhaust Fans	200	Sealed
Ens	1	Exhaust Fans	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Framed:Flat - Flat Framed (Metal Deck)	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).