Nationwide House Energy Rating Scheme — Class 2 summary
NatHERS Certificate No. 0006774870

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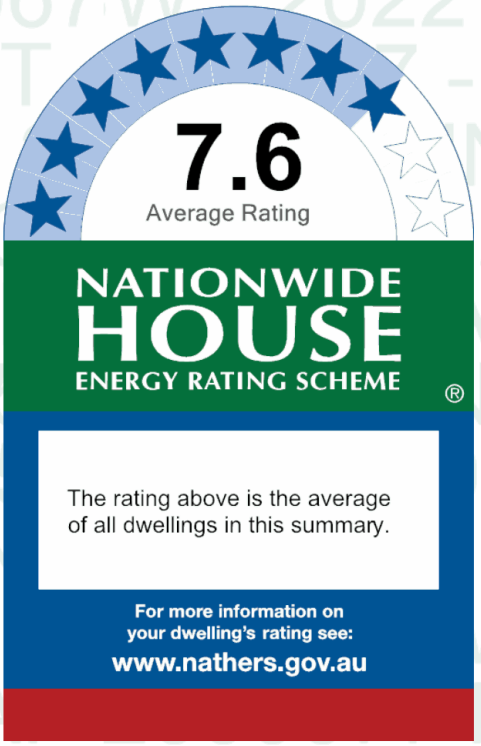


Property

Address 47 - 55 Grafton St , Bondi Junction , NSW , 2022

Lot/DP 2/1073908

NatHERS climate zone 56

Accredited assessor

Fonda Armagos

EMF Griffiths

fondaa@emf.com.au

0732542788

Accreditation No. 10045

Assessor Accrediting Organisation HERA

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=UNNWPfzIl . When using either link, ensure you are visiting hstar.com.au

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0006773527	1.01	40.5	8	48.4	6.2
0006773535	1.02	34.5	7.1	41.7	6.8
0006773543	1.03	33.3	7.2	40.5	6.9
0006773550	1.04	33.7	7.1	40.8	6.8
0006773568	1.05	36.7	6.9	43.6	6.6

Continued Over

National Construction Code (NCC) requirements

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

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

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

Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (MJ/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0006773576	1.06	11.7	8.3	20	8.5
0006773584	1.07	14.3	7.1	21.4	8.4
0006773592	1.08	32.3	6.9	39.2	6.9
0006773600	1.09	31.9	6.5	38.3	7
0006773618	1.10	33	7.1	40.1	6.9
0006773626	1.11	34.4	6.6	41	6.8
0006773634	1.12	44.1	8.6	52.7	5.9
0006773642	2.01	25.5	9.8	35.2	7.3
0006773659	2.02	13.6	8.5	22	8.3
0006773667	2.03	11.2	8.6	19.8	8.5
0006773675	2.04	10.6	8.7	19.3	8.6
0006773683	2.05	15.1	8.7	23.7	8.2
0006773691	2.06	10.7	8.5	19.3	8.6
0006773709	2.07	5.8	7.5	13.3	9.1
0006773717	2.08	13	8.3	21.3	8.4
0006773725	2.09	14.9	7.7	22.6	8.3
0006773733	2.10	11.6	8.6	20.3	8.4
0006773741	2.11	13.4	7.8	21.2	8.4
0006773758	2.12	36.8	9.4	46.2	6.4
0006773766	3.01	21.9	8.4	30.3	7.6
0006773774	3.02	14.7	7.2	21.9	8.3
0006773782	3.03	18.2	7.9	26.1	7.9
0006773790	3.04	16.1	8.1	24.2	8.2
0006773808	3.05	13.7	7.3	21	8.4
0006773816	3.06	11.1	6.4	17.5	8.7
0006773824	3.07	14.2	7.8	22	8.3
0006773832	3.08	17	7.8	24.8	8.1
0006773840	3.09	15.5	7	22.5	8.3
0006773857	3.10	25.6	8.2	33.8	7.4
0006773865	4.01	28.9	7.5	36.4	7.2
0006773873-01	4.02	22.9	6.6	29.5	7.7
0006773881-01	4.03	28.1	8.7	36.8	7.2
0006773899	4.04	26	8.9	34.9	7.3
0006773907	4.05	19.7	5.8	25.5	8
0006773915	4.06	21.1	5.7	26.8	7.9
0006773923	4.07	24.4	9.5	33.9	7.4
0006773931	4.08	26.1	7.4	33.5	7.4
0006773949	4.09	44.5	9	53.4	5.8
0006773956	4.10	32	7.4	39.4	6.9
0006773964-01	5.01	42.8	23.1	65.9	5

Certificate number and link	Unit Number	Heating load (MJ/m /p.a.)	Cooling load (MJ/m /p.a.)	Total load (MJ/m /p.a.)	Star rating
0006773972	5.02	8.6	10.6	19.2	8.6
0006773980	5.03	17.5	14.4	31.9	7.5
0006773998-04	6.01	28.2	25.2	53.4	5.8
0006774004	6.02	8.3	9.2	17.5	8.7
0006774012	6.03	3.5	7.9	11.5	9.3
0006774020	6.04	10.1	14.9	25	8.1
0006774038-01	7.01	25	25.3	50.3	6.1
0006774046	7.02	8.2	9	17.2	8.7
0006774053	7.03	3.7	8	11.7	9.2
0006774061	7.04	10.3	15	25.4	8.1
0006774079-01	8.01	23.9	25.2	49.1	6.2
0006774087	8.02	10.7	9.2	19.8	8.5
0006774095	8.03	3.8	8.1	12	9.2
0006774103	8.04	11	14.6	25.6	8
0006774111-01	9.01	24	22.4	46.3	6.4
0006774129	9.02	12.1	9.2	21.3	8.4
0006774137	9.03	4.9	7.9	12.7	9.1
0006774145	9.04	12.9	14.1	27	7.9
0006774152-01	10.01	23.4	22.2	45.6	6.4
0006774160	10.02	12.1	8.8	20.9	8.4
0006774178	10.03	3.8	8	11.9	9.2
0006774186	10.04	13.9	14.2	28.1	7.8
0006774194-01	11.01	23.3	22.2	45.5	6.4
0006774202	11.02	13.1	9.1	22.2	8.3
0006774210	11.03	3	8.3	11.2	9.3
0006774228	11.04	14.9	14.5	29.4	7.7
0006774236-01	12.01	22.9	22.4	45.3	6.4
0006774244	12.02	14.9	8.8	23.7	8.2
0006774251	12.03	2.7	8.2	10.9	9.3
0006774269	12.04	16	15.1	31.1	7.6
0006774277-01	13.01	23.2	22.2	45.4	6.4
0006774285	13.02	14.8	9.1	24	8.2
0006774293	13.03	2.5	8.3	10.7	9.3
0006774301	13.04	17.3	15.5	32.8	7.4
0006774319-01	14.01	24	23.3	47.3	6.3
0006774327	14.02	17.7	9.9	27.5	7.9
0006774335	14.03	2.4	8.2	10.6	9.3
0006774343	14.04	18.5	17.1	35.7	7.2
0006774350-01	15.01	26.9	21.1	48	6.2
0006774368	15.02	13.4	8.1	21.5	8.4
0006774376	15.03	24.5	16.2	40.7	6.9
0006774384-01	16.01	26.1	20.4	46.5	6.4

Certificate number and link	Unit Number	Heating load (MJ/m /p.a.)	Cooling load (MJ/m /p.a.)	Total load (MJ/m /p.a.)	Star rating
0006774392	16.02	12.9	8.1	21.1	8.4
0006774400	16.03	24.6	17.6	42.2	6.7
0006774418-01	17.01	26.2	20.4	46.6	6.4
0006774426	17.02	13	8	21.1	8.4
0006774434	17.03	23.9	19.2	43.1	6.7
0006774442-01	18.01	34.9	19.4	54.3	5.8
0006774459	18.02	20.5	8	28.5	7.8
0006774467	18.03	33.2	20.5	53.7	5.8
Average		19.35	11.35	30.69	7.64

Explanatory Notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

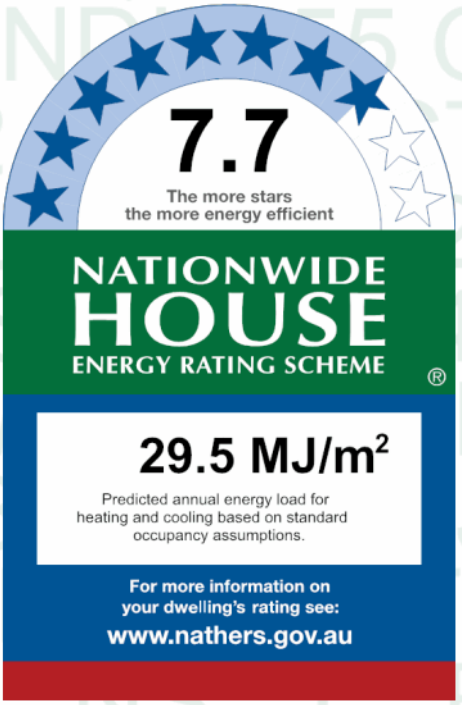
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006773873-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 4.02, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	90.0	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	90.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
22.9 MJ/m^2	6.6 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045

Assessor Accrediting Organisation

HERA

Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73

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*
Bed 1 Ens.	ALM-002-01 A	n/a	1850	1775	n/a	45	S	Yes
Bed 2	ALM-002-01 A	n/a	1850	1775	n/a	45	S	Yes
Living balc abo	ALM-002-01 A	n/a	2700	4500	n/a	60	N	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	2040	820	90	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2700	4145	S	50	NO
Kitchen/Living	EW-1	2800	1194	S	6750	NO
Bed 2	EW-2	2700	2740	S	6750	NO
Living balc abo	EW-2	2700	4500	N	2500	NO
Bed 2 balc abov	EW-2	2700	1140	S	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		81.00	No insulation
IW-2 - Concrete Panel/Blocks filled, plaster on studs		86.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	18.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Kitchen/Living	Concrete Slab, Unit Below 200mm	31.80	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2	Concrete Slab, Unit Below 200mm	11.20	None	No Insulation	Carpet+Rubber Underlay 18mm
Living balc abo	Concrete Slab, Unit Below 200mm	16.40	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 200mm	10.10	None	No Insulation	60/40 Ceramic/Cork
Bed 2 balc abov	Concrete Slab, Unit Below 200mm	1.40	None	No Insulation	Carpet+Rubber Underlay 18mm

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 2	Concrete, Plasterboard	No insulation	No
Living balc abo	Concrete, Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed 2 balc abov	Concrete, Plasterboard	Bulk Insulation R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	4	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 2	2	Downlights - LED	150	Sealed
Living balc abo	4	Downlights - LED	150	Sealed
Kitchen/Living	3	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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. 0006773881-01

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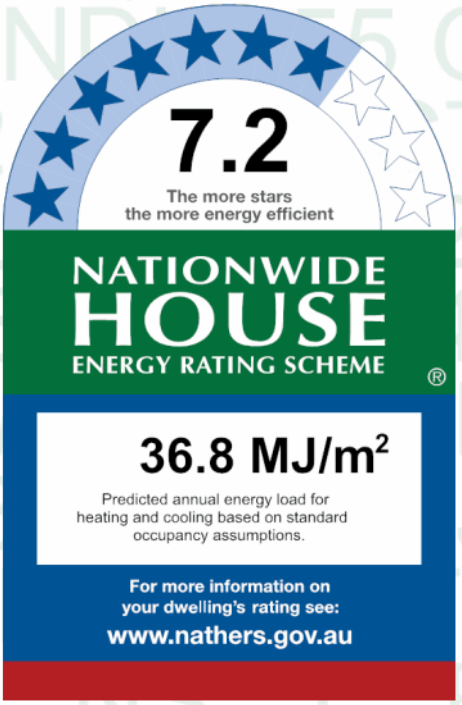


Property

Address	Unit 4.03, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	59.0	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	59.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
28.1 MJ/m^2	8.7 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73

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*
Bedroom 1	ALM-002-01 A	n/a	1850	1850	n/a	45	S	Yes
Living balc abo	ALM-002-01 A	n/a	2700	4500	n/a	60	N	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	2040	820	90	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3095	S	10000	NO
Kitchen/Living	EW-1	2700	1393	S	10000	NO
Living balc abo	EW-2	2700	4500	N	2750	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		72.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		46.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 200mm	12.70	None	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab, Unit Below 200mm	28.10	None	No Insulation	Cork Tiles or Parquetry 8mm
Living balc abo	Concrete Slab, Unit Below 200mm	11.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Bath	Concrete Slab, Unit Below 200mm	6.40	None	No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	No insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Living balc abo	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bath	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed
Living balc abo	2	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	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
Waterproofing Membrane	No Insulation, Only an Air Gap	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.

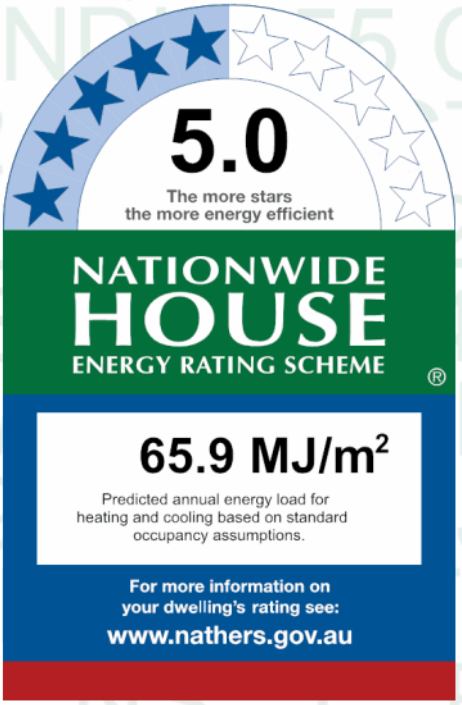
Glossary

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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006773964-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 5.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	232.0	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	232.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
42.8 MJ/m^2	23.1 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

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*
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4174	n/a	60	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	2000	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6650	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6800	n/a	72	N	No
Kitchen/Living	ALM-004-04 A	n/a	2850	1451	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	3688	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1000	n/a	00	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 3 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 4	ALM-004-04 A	n/a	2850	1436	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1436	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1436	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R2	No
EW-3	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2875	4200	N	3900	NO
Bed 1 Ens.	EW-1	2850	2000	W	8650	YES
Kitchen/Living	EW-1	2875	6650	W	1825	NO
Kitchen/Living	EW-1	2875	6795	N	5600	YES
Kitchen/Living	EW-1	2850	1495	W	2275	YES
Kitchen/Living	EW-1	2875	3688	W	2287	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 2 Ens.	EW-2	2850	7895	S	0	NO
Bed 2 Ens.	EW-1	2850	4118	W	158	NO
Bed 3 Ens.	EW-2	2700	1400	E	3900	NO
Bed 3 Ens.	EW-2	2700	2941	S	4254	NO
Bed 3 Ens.	EW-3	2850	1204	SW	125	YES
Bed 3 Ens.	EW-2	2700	695	S	0	YES
Bed 4	EW-1	2850	4290	W	775	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		76.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		159.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	36.50	None	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab, Unit Below 200mm	66.40	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Suspended Concrete Slab 200mm	12.70	Totally Open	Bulk Insulation in Contact with Floor	Cork Tiles or Parquetry 8mm
Bed 2 Ens.	Suspended Concrete Slab 200mm	31.90	Very Open	Bulk Insulation in Contact with Floor R2	60/40 Carpet 10mm/Ceramic
Bed 3 Ens.	Suspended Concrete Slab 200mm	20.40	Very Open	Bulk Insulation in Contact with Floor R2	60/40 Carpet 10mm/Ceramic
Bed 4	Suspended Concrete Slab 200mm	22.50	Very Open	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Pantry	Concrete Slab, Unit Below 200mm	2.40	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry	Suspended Concrete Slab 200mm	0.30	Totally Open	Bulk Insulation in Contact with Floor	Cork Tiles or Parquetry 8mm
Entry/Bath/Ldry	Suspended Concrete Slab 200mm	33.40	Very Open	Bulk Insulation in Contact with Floor R2	40/60 Ceramic/Cork
Liv. Roof Above	Concrete Slab, Unit Below 200mm	3.20	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	2.10	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3 Ens.	Concrete, Plasterboard	No insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Entry/Bath/Ldry	Concrete, Plasterboard	No insulation	No
Liv. Roof Above	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	6	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	5	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3 Ens.	4	Downlights - LED	150	Sealed
Bed 3 Ens.	1	Exhaust Fans	300	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed
Entry/Bath/Ldry	6	Downlights - LED	150	Sealed
Entry/Bath/Ldry	2	Exhaust Fans	300	Sealed
Liv. Roof Above	1	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

* Refer to glossary.

Explanatory notes

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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.
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Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006773998-04

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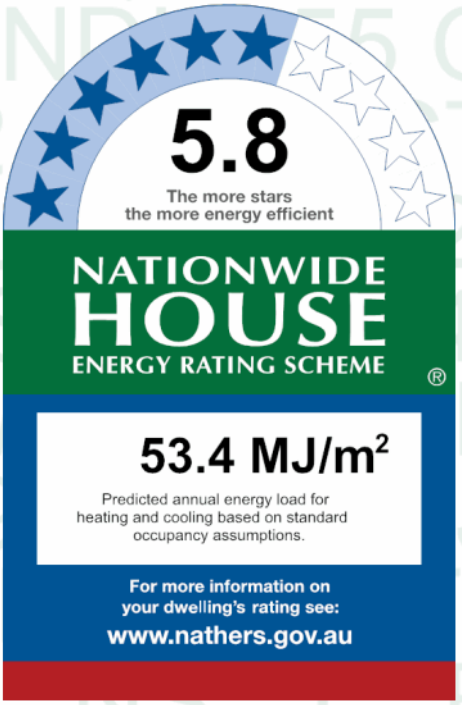

Property

Address	Unit 6.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	217.0	Open	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
28.2 MJ/m^2	25.2 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	3750	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	67.80	None	No Insulation	20/80 Ceramic/Cork
Kitchen/Living	Suspended Concrete Slab 200mm	5.90	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Pantry	1	Downlights - LED	150	Sealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774038-01

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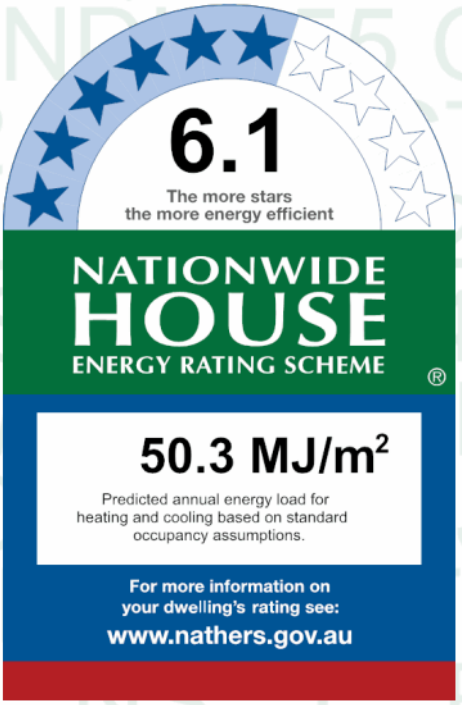

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NCC Class*	2
Type	New Dwelling

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Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

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Conditioned*	217.0	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	217.0	56
Garage	0.0	

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045

Assessor Accrediting Organisation

HERA

Declaration of interest	Declaration completed: no conflicts

Thermal performance

Heating	Cooling
25.0 MJ/m^2	**25.3** MJ/m^2

About the rating

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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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	3625	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

About this report

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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.

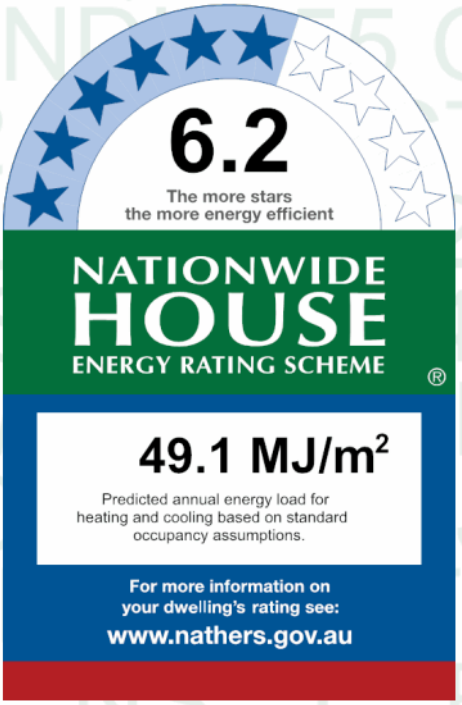
Glossary

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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774079-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 8.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	217.0	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	217.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
23.9	**25.2**
MJ/m^2	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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045

Assessor Accrediting Organisation

HERA

Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	3325	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
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Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

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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.
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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.
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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.
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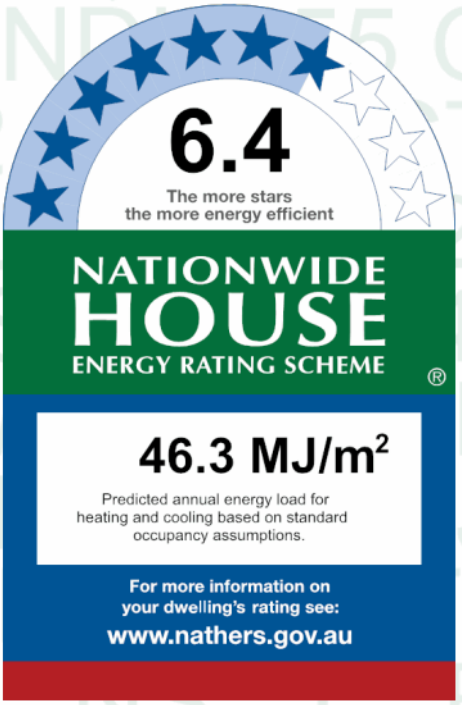
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774111-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 9.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	217.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
24.0 MJ/m^2	**22.4** 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045

Assessor Accrediting Organisation

HERA

Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
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engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	2775	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

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

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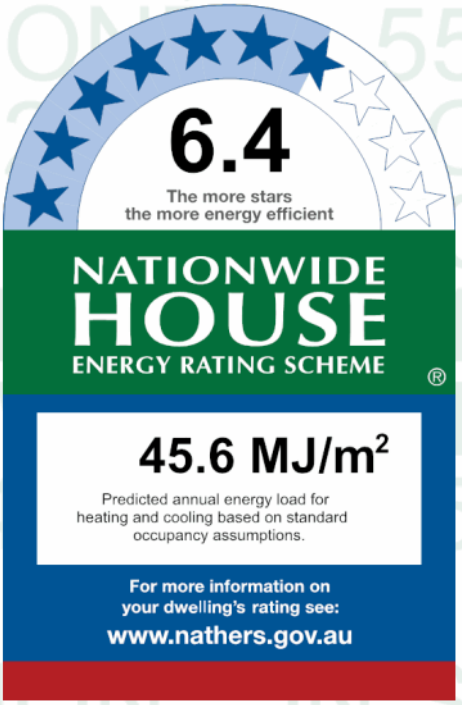
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774152-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



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NCC Class*	2
Type	New Dwelling

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Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

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Conditioned*	217.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
23.4 MJ/m^2	22.2 MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

About the rating

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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.

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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".

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Additional notes

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living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	2425	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

About this report

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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.

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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.
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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.
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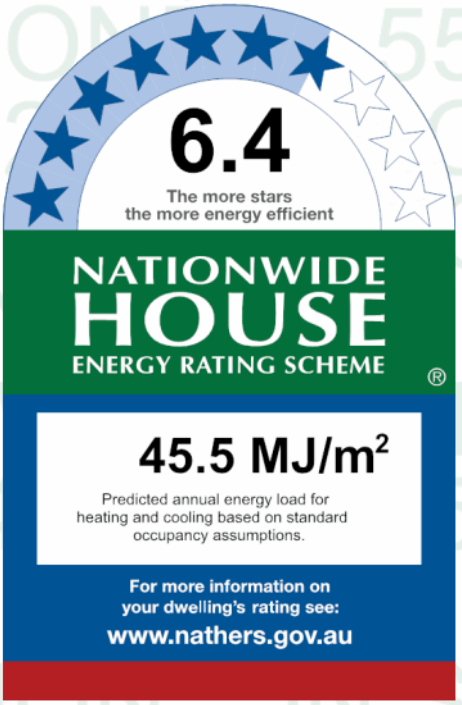
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced 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. 0006774194-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 11.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	217.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
23.3 MJ/m^2	22.2 MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

About the rating

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

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	2250	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

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Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

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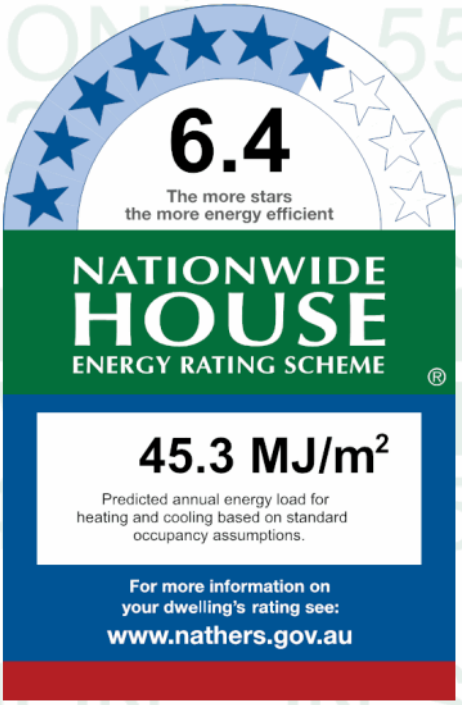
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774236-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 12.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	217.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
22.9 MJ/m^2	22.4 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	2025	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

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.
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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774277-01

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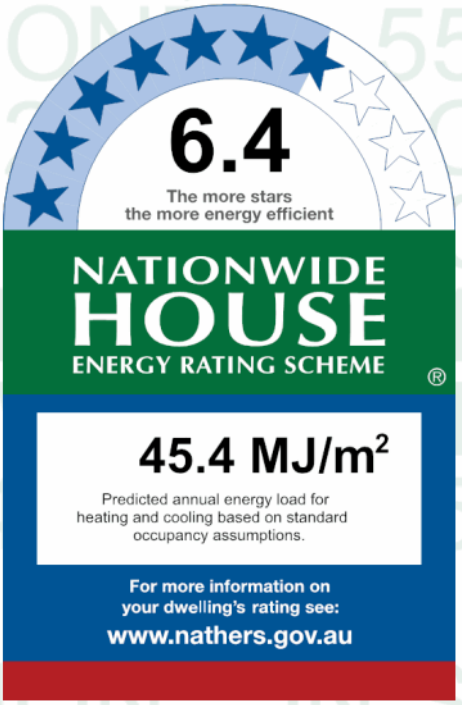

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NCC Class*	2
Type	New Dwelling

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Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	217.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	217.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
23.2 MJ/m^2	22.2 MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

About the rating

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

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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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
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engaged on this project. Details will be confirmed on the electrical plans when available.
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bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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	

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
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9250	N	2025	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		125.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	73.60	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

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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.

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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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774319-01

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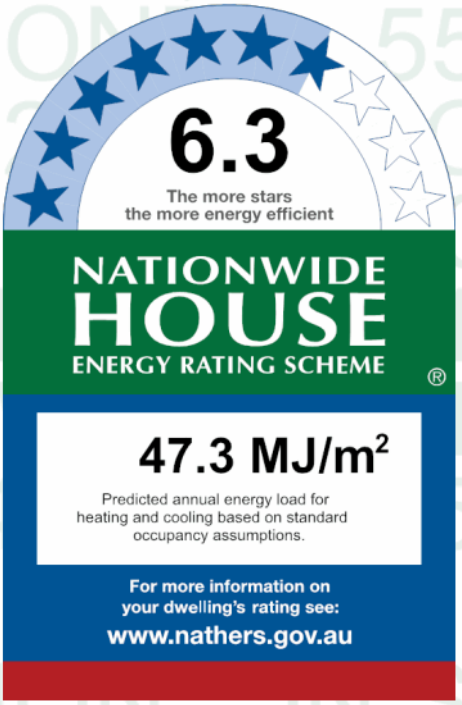

Property

Address	Unit 14.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	216.0	Exposed
Unconditioned*	0.0	**NatHERS climate zone**
Total	216.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
24.0 MJ/m^2	**23.3** MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

About the rating

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

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-004-04 A	n/a	2875	8100	n/a	60	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	9250	n/a	64	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4104	n/a	60	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1551	n/a	00	W	No
Bed 1 Ens.	ALM-004-04 A	n/a	2875	3153	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 3	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 4	ALM-003-04 A	n/a	2850	1361	n/a	10	S	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 4	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 4	ALM-004-04 A	n/a	2850	1450	n/a	00	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2875	8095	W	1000	NO
Kitchen/Living	EW-1	2875	9245	N	1925	NO
Bed 1 Ens.	EW-1	2875	5895	W	925	YES
Bed 1 Ens.	EW-1	2875	3148	W	776	YES
Bed 2 Ens.	EW-1	2700	1350	E	50	NO
Bed 2 Ens.	EW-1	2700	2974	S	56	NO
Bed 2 Ens.	EW-1	2850	1026	SW	56	YES
Bed 2 Ens.	EW-1	2850	745	S	50	YES
Bed 3	EW-1	2850	3740	S	50	NO
Bed 4	EW-1	2850	4095	S	50	NO
Bed 4	EW-1	2850	4143	W	103	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		146.00	No insulation
IW-2 - Concrete Panel/Blocks filled, plaster on studs		75.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 200mm	67.70	None	No Insulation	20/80 Ceramic/Cork
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	46.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	21.90	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3	Concrete Slab, Unit Below 200mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Bed 4	Concrete Slab, Unit Below 200mm	21.10	None	No Insulation	Carpet+Rubber Underlay 18mm
Pantry	Concrete Slab, Unit Below 150mm	3.30	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	37.30	None	No Insulation	40/60 Ceramic/Cork
Liv. Roof Above	Concrete Slab, Unit Below 150mm	5.20	None	No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Liv. Roof Above	Concrete, Plasterboard	Bulk Insulation R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	3	Exhaust Fans	300	Sealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	4	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3	2	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

Explanatory notes

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
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* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774350-01

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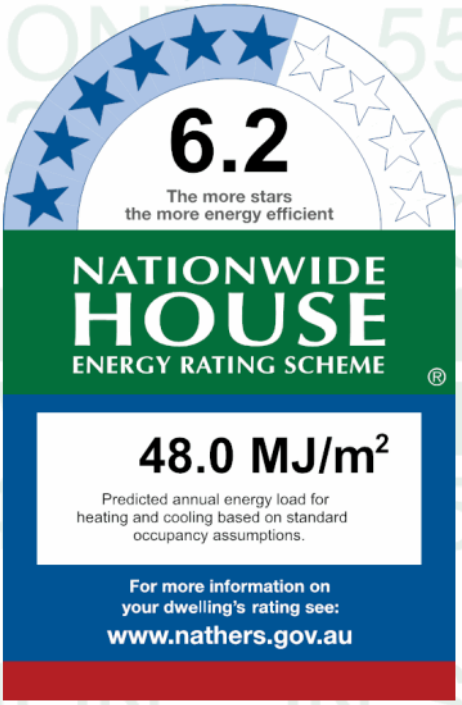

Property

Address	Unit 15.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	232.0	Exposed
Unconditioned*	0.0	**NatHERS climate zone**
Total	232.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
26.9 MJ/m^2	21.1 MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

About the rating

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

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National Construction Code (NCC) requirements

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

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

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

Certificate check

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

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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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

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*
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4100	n/a	60	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1800	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6600	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6850	n/a	67	N	No
Kitchen/Living	ALM-004-04 A	n/a	2850	1300	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	3650	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1000	n/a	00	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 3 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 4	ALM-004-04 A	n/a	2875	4104	n/a	60	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2875	4100	N	1525	NO
Bed 1 Ens.	EW-1	2850	2000	W	7700	YES
Kitchen/Living	EW-1	2875	6600	W	875	NO
Kitchen/Living	EW-1	2875	6845	N	2275	YES
Kitchen/Living	EW-1	2850	1345	W	0	YES
Kitchen/Living	EW-1	2875	3699	W	770	YES
Bed 2 Ens.	EW-1	2850	7895	S	50	NO
Bed 2 Ens.	EW-1	2850	4118	W	56	NO
Bed 3 Ens.	EW-1	2700	1400	E	3850	NO
Bed 3 Ens.	EW-1	2700	2941	S	4254	NO
Bed 3 Ens.	EW-2	2850	1204	SW	90	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 3 Ens.	EW-1	2700	695	S	50	YES
Bed 4	EW-1	2875	4440	W	650	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		76.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		130.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	36.00	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 1 Ens.	Suspended Concrete Slab 200mm	2.60	Totally Open	No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Concrete Slab, Unit Below 200mm	81.40	None	No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living	Suspended Concrete Slab 200mm	1.10	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	31.80	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3 Ens.	Concrete Slab, Unit Below 200mm	20.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 4	Concrete Slab, Unit Below 200mm	22.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry	Concrete Slab, Unit Below 200mm	2.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Entry/Bath/Ldry	Concrete Slab, Unit Below 200mm	33.50	None	No Insulation	60/40 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3 Ens.	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Entry/Bath/Ldry	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Kitchen/Living	8	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	5	Downlights - LED	150	Sealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3 Ens.	4	Downlights - LED	150	Sealed
Bed 3 Ens.	1	Exhaust Fans	300	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed
Entry/Bath/Ldry	6	Downlights - LED	150	Sealed
Entry/Bath/Ldry	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

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.

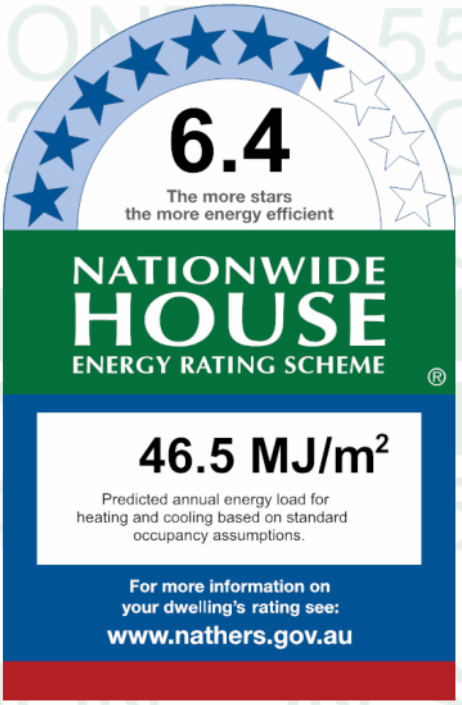
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774384-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 16.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	232.0	Exposed	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	232.0	56	
Garage	0.0		

Thermal performance

Heating	Cooling
26.1 MJ/m^2	20.4 MJ/m^2

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
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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.

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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.

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default insulation clearance of 300mm has been modelled for all exhaust fans.
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bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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				SHGC lower limit	SHGC upper limit
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ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

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*
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4100	n/a	60	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1800	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6600	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6850	n/a	67	N	No
Kitchen/Living	ALM-004-04 A	n/a	2850	1300	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	3650	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1000	n/a	00	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 3 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 4	ALM-004-04 A	n/a	2875	4104	n/a	60	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2875	4100	N	1400	NO
Bed 1 Ens.	EW-1	2850	2000	W	7700	YES
Kitchen/Living	EW-1	2875	6600	W	875	NO
Kitchen/Living	EW-1	2875	6845	N	2225	YES
Kitchen/Living	EW-1	2850	1345	W	0	YES
Kitchen/Living	EW-1	2875	3699	W	770	YES
Bed 2 Ens.	EW-1	2850	7895	S	50	NO
Bed 2 Ens.	EW-1	2850	4118	W	56	NO
Bed 3 Ens.	EW-1	2700	1400	E	3850	NO
Bed 3 Ens.	EW-1	2700	2941	S	4254	NO
Bed 3 Ens.	EW-2	2850	1204	SW	90	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 3 Ens.	EW-1	2700	695	S	50	YES
Bed 4	EW-1	2875	4440	W	650	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		76.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		130.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	38.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Kitchen/Living	Concrete Slab, Unit Below 200mm	82.50	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	31.80	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3 Ens.	Concrete Slab, Unit Below 200mm	20.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 4	Concrete Slab, Unit Below 200mm	22.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry	Concrete Slab, Unit Below 200mm	2.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Entry/Bath/Ldry	Concrete Slab, Unit Below 200mm	33.50	None	No Insulation	60/40 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3 Ens.	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Entry/Bath/Ldry	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Kitchen/Living	8	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	5	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3 Ens.	4	Downlights - LED	150	Sealed
Bed 3 Ens.	1	Exhaust Fans	300	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed
Entry/Bath/Ldry	6	Downlights - LED	150	Sealed
Entry/Bath/Ldry	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

Explanatory notes

About this report

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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.

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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.
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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.
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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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774418-01

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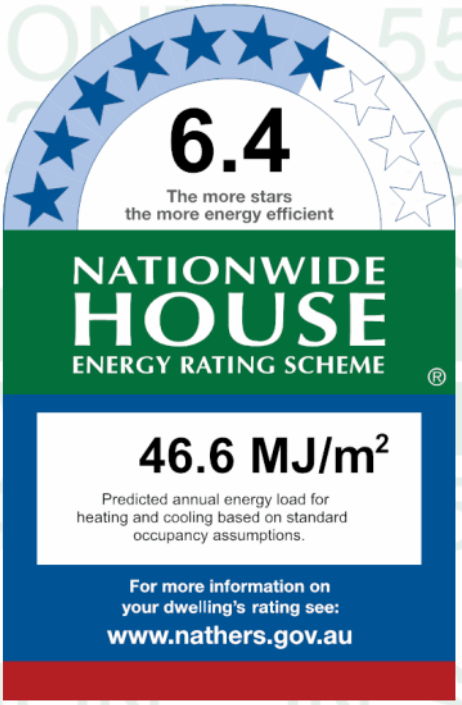

Property

Address	Unit 17.01, 47 - 55 Grafton St , Bondi Junction , NSW , 2022
Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	232.0	Exposed
Unconditioned*	0.0	**NatHERS climate zone**
Total	232.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
26.2 MJ/m^2	20.4 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.

Accredited assessor

Name	Fonda Armagos
Business name	EMF Griffiths
Email	fondaa@emf.com.au
Phone	0732542788
Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

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*
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4100	n/a	60	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1800	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6600	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6850	n/a	67	N	No
Kitchen/Living	ALM-004-04 A	n/a	2850	1300	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	3650	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1000	n/a	00	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 3 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 4	ALM-004-04 A	n/a	2875	4104	n/a	60	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2875	4100	N	1400	NO
Bed 1 Ens.	EW-1	2850	2000	W	7700	YES
Kitchen/Living	EW-1	2875	6600	W	875	NO
Kitchen/Living	EW-1	2875	6845	N	2225	YES
Kitchen/Living	EW-1	2850	1345	W	0	YES
Kitchen/Living	EW-1	2875	3699	W	770	YES
Bed 2 Ens.	EW-1	2850	7895	S	50	NO
Bed 2 Ens.	EW-1	2850	4118	W	56	NO
Bed 3 Ens.	EW-1	2700	1400	E	3850	NO
Bed 3 Ens.	EW-1	2700	2941	S	4254	NO
Bed 3 Ens.	EW-2	2850	1204	SW	90	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 3 Ens.	EW-1	2700	695	S	50	YES
Bed 4	EW-1	2875	4440	W	650	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		76.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		130.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	38.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Kitchen/Living	Concrete Slab, Unit Below 200mm	82.50	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	31.80	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3 Ens.	Concrete Slab, Unit Below 200mm	20.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 4	Concrete Slab, Unit Below 200mm	22.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry	Concrete Slab, Unit Below 200mm	2.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Entry/Bath/Ldry	Concrete Slab, Unit Below 200mm	33.50	None	No Insulation	60/40 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Bed 2 Ens.	Concrete, Plasterboard	No insulation	No
Bed 3 Ens.	Concrete, Plasterboard	No insulation	No
Bed 4	Concrete, Plasterboard	No insulation	No
Pantry	Concrete, Plasterboard	No insulation	No
Entry/Bath/Ldry	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
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Pantry	1	Downlights - LED	150	Sealed
Entry/Bath/Ldry	6	Downlights - LED	150	Sealed
Entry/Bath/Ldry	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

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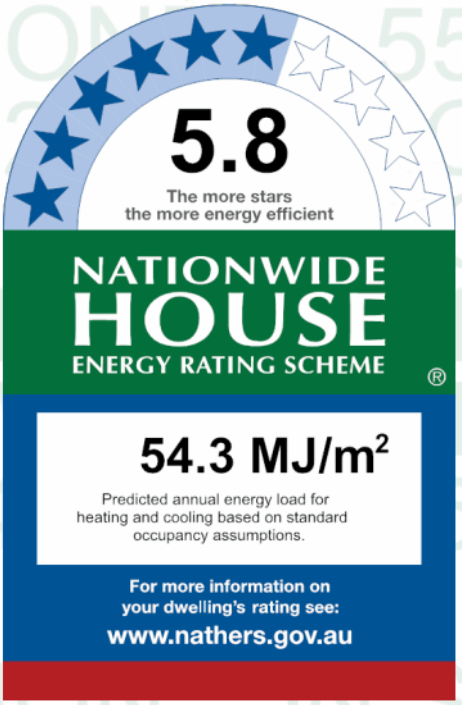
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006774442-01

Generated on 15 Jul 2022 using BERS Pro v4.4.1.5 (3.21)



Property

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Lot/DP	2/1073908
NCC Class*	2
Type	New Dwelling

Plans

Main Plan	Architetural drawing set S4.55 dated 29th June 2022
Prepared by	Koichi Takada

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
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Unconditioned*	0.0	**NatHERS climate zone**
Total	232.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
34.9 MJ/m^2	**19.4** 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.

Accredited assessor

Name	Fonda Armagos
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Accreditation No.	10045
Assessor Accrediting Organisation	
HERA	
Declaration of interest	Declaration completed: no conflicts

Verification

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

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

No mechanical plan available at this stage. The following details are based on advice from the mechanical
engineer engaged on this project. Details will be confirmed on the mechanical plans when available.
non-return exhaust fans with damper in kitchen, laundry and bathrooms.
default insulation clearance of 300mm has been modelled for all exhaust fans.
No electrical plan available at this stage. The following details are based on advice from the electrical engineer
engaged on this project. Details will be confirmed on the electrical plans when available.
bedroom < 15sqm 2 sealed LED downlights
bedroom >15sqm 4 sealed LED downlights
bathrooms 2 sealed LED downlights
corridors 1 sealed LED downlight per 2.5-3sqm length
living/TV < 20sqm 4 sealed LED downlights
living/TV >20sqm 6 sealed LED downlights
dining <10sqm 2 sealed LED downlights
dining >10sqm 4 sealed LED downlights
default insulation clearance of 150mm has been modelled for all downlights.
I have modeled the shading in accordance with NatHERS principles

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-004-04 A	ALM-004-04 A Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ALM-003-04 A	ALM-003-04 A Aluminium A DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35

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*
Bed 1 Ens.	ALM-004-04 A	n/a	2875	4100	n/a	60	N	No
Bed 1 Ens.	ALM-004-04 A	n/a	2850	1800	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6600	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	6850	n/a	67	N	No
Kitchen/Living	ALM-004-04 A	n/a	2850	1300	n/a	00	W	No
Kitchen/Living	ALM-004-04 A	n/a	2875	3650	n/a	60	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1000	n/a	00	S	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 2 Ens.	ALM-003-04 A	n/a	2850	1450	n/a	10	W	No
Bed 2 Ens.	ALM-004-04 A	n/a	2850	1450	n/a	00	W	No
Bed 3 Ens.	ALM-003-04 A	n/a	2850	1000	n/a	10	SW	No
Bed 4	ALM-004-04 A	n/a	2875	4104	n/a	60	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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No
EW-2	Tilt up concrete, lined	0.30	Light	Bulk Insulation R1	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1 Ens.	EW-1	2875	4100	N	1300	NO
Bed 1 Ens.	EW-1	2850	2000	W	7700	YES
Kitchen/Living	EW-1	2875	6600	W	875	NO
Kitchen/Living	EW-1	2875	6845	N	2200	YES
Kitchen/Living	EW-1	2850	1345	W	0	YES
Kitchen/Living	EW-1	2875	3699	W	770	YES
Bed 2 Ens.	EW-1	2850	7895	S	50	NO
Bed 2 Ens.	EW-1	2850	4118	W	56	NO
Bed 3 Ens.	EW-1	2700	1400	E	3850	NO
Bed 3 Ens.	EW-1	2700	2941	S	4254	NO
Bed 3 Ens.	EW-2	2850	1204	SW	90	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 3 Ens.	EW-1	2700	695	S	50	YES
Bed 4	EW-1	2875	4440	W	650	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Panel/Blocks filled, plaster on studs		76.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		130.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1 Ens.	Concrete Slab, Unit Below 200mm	38.60	None	No Insulation	60/40 Carpet 10mm/Ceramic
Kitchen/Living	Concrete Slab, Unit Below 200mm	82.50	None	No Insulation	Cork Tiles or Parquetry 8mm
Bed 2 Ens.	Concrete Slab, Unit Below 200mm	31.80	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 3 Ens.	Concrete Slab, Unit Below 200mm	20.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bed 4	Concrete Slab, Unit Below 200mm	22.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry	Concrete Slab, Unit Below 200mm	2.70	None	No Insulation	Cork Tiles or Parquetry 8mm
Entry/Bath/Ldry	Concrete Slab, Unit Below 200mm	33.50	None	No Insulation	60/40 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 1 Ens.	Concrete, Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed 2 Ens.	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed 3 Ens.	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed 4	Concrete, Plasterboard	Bulk Insulation R2.5	No
Pantry	Concrete, Plasterboard	Bulk Insulation R2.5	No
Entry/Bath/Ldry	Concrete, Plasterboard	Bulk Insulation R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed 1 Ens.	7	Downlights - LED	150	Sealed
Bed 1 Ens.	1	Exhaust Fans	300	Sealed
Kitchen/Living	8	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bed 2 Ens.	5	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 2 Ens.	1	Exhaust Fans	300	Sealed
Bed 3 Ens.	4	Downlights - LED	150	Sealed
Bed 3 Ens.	1	Exhaust Fans	300	Sealed
Bed 4	4	Downlights - LED	150	Sealed
Pantry	1	Downlights - LED	150	Sealed
Entry/Bath/Ldry	6	Downlights - LED	150	Sealed
Entry/Bath/Ldry	2	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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).