Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918220

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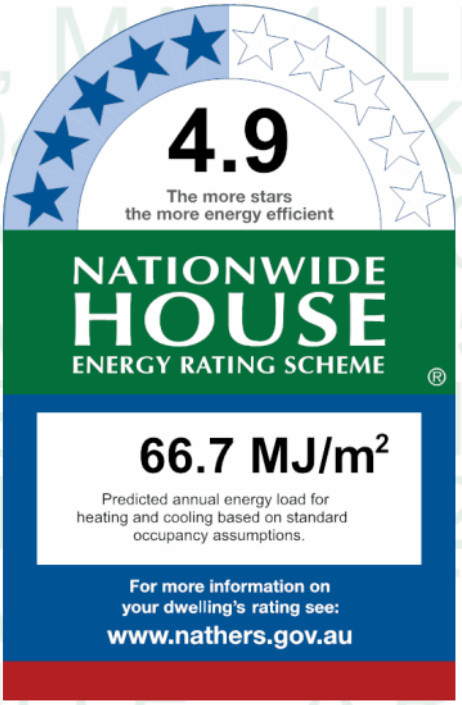

Property

Address	Unit 101, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	63.4	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	63.4	56
Garage		

Thermal performance

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

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=iXBfqGRfZ.
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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
LIV/DIN	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
LIV/DIN	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None

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
KIT	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
LIV/DIN	EW-004	2700	6000	NW		Yes
LIV/DIN	EW-005	2700	3600	NE		Yes
KIT	EW-001	2700	1600	SE	6400	Yes
Bed 1	EW-005	2700	6500	NE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	46.98	
IW-002	Plasterboard/AAC block	40.23	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
LIV/DIN/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	2.60			Carpet 10 + rubber underlay 8
LIV/DIN/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R2.5	19.73		R2.5	Carpet 10 + rubber underlay 8
KIT/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	10.65			Carpet 10 + rubber underlay 8
KIT/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R2.5	6.55		R2.5	Carpet 10 + rubber underlay 8
Bed 1/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R2.5	18.18		R2.5	Carpet 10 + rubber underlay 8
Bath/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles R2.5	5.70		R2.5	Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/LIV/DIN	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/KIT	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
LIV/DIN	9	Downlight		Sealed
KIT	6	Downlight		Sealed
KIT	1	Ceiling exhaust fan	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 1	6	Downlight		Sealed
Bath	2	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

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.
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. 0007918238

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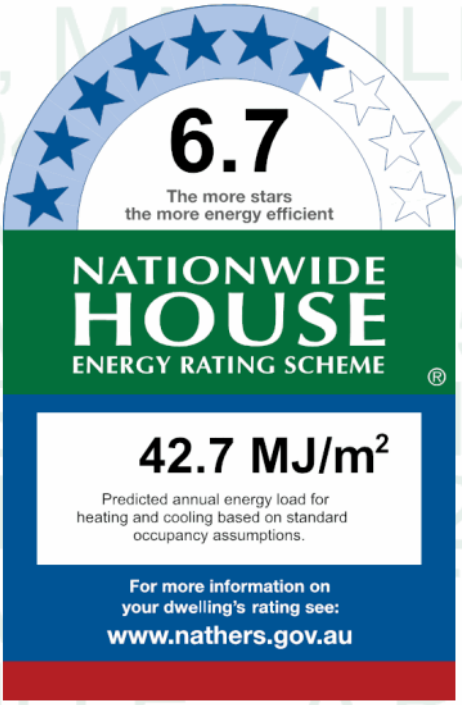

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NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	31.4	Suburban	
Unconditioned*	4.2	**NatHERS climate zone**	
Total	35.6	56	
Garage			

Thermal performance

Heating	Cooling
17.5 MJ/m^2	**25.2** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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".

Provisional* values

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

Additional notes

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Awning	90	SW	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes
Liv/Kit	EW-002	2700	3800	SW		No
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bed 1	EW-002	2700	3800	SW		No
Bath	EW-002	2700	2500	SW		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	27.00	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

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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. 0007918246

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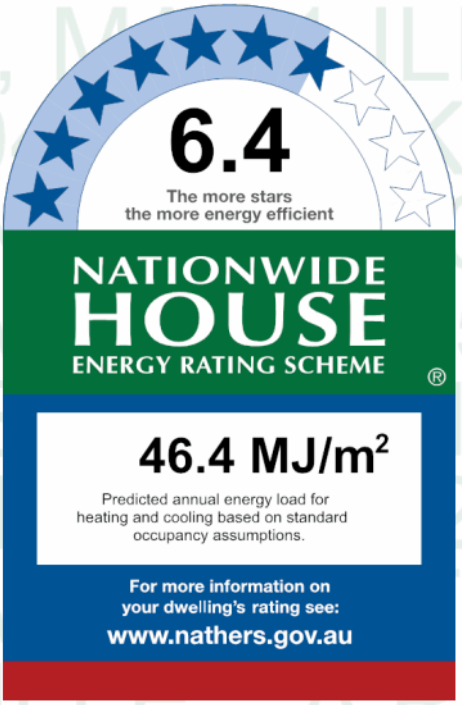

Property

Address	Unit 103, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	31.4	Suburban	
Unconditioned*	4.2	**NatHERS climate zone**	
Total	35.6	56	
Garage			

Thermal performance

Heating	Cooling
20.4	**25.9**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=gRvkrQrva.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Awning	90	NE	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes
Liv/Kit	EW-002	2700	3800	NE		No
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bed 1	EW-002	2700	3800	NE		No
Bath	EW-002	2700	2500	NE		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	27.00	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

* 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

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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

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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. 0007918253

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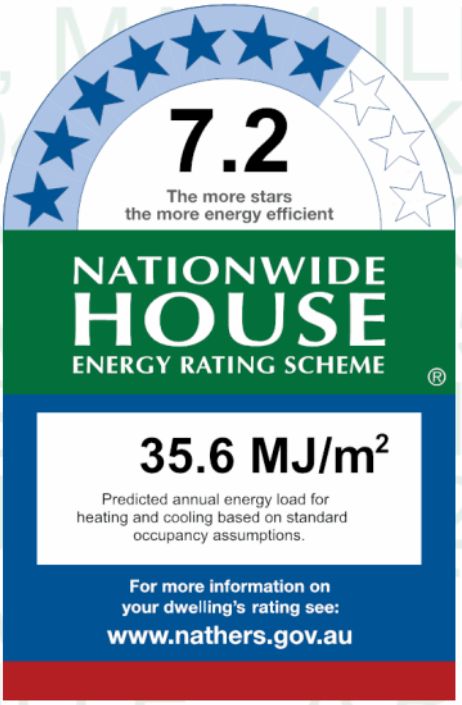

Property

Address	Unit 104, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	35.6	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	35.6	56
Garage		

Thermal performance

Heating	Cooling
11.2	**24.4**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=lhjQxyszG.
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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	62.91	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

Explanatory notes

About this report

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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.
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. 0007918279

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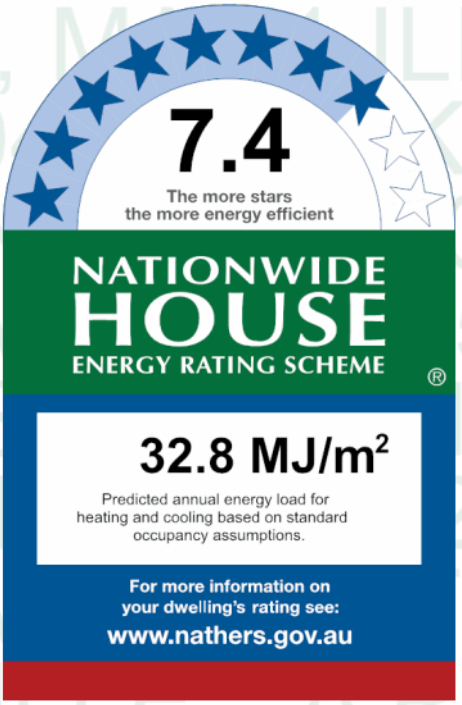

Property

Address	Unit 105, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	60.5	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	60.5	56
Garage		

Thermal performance

Heating	Cooling
14.1 MJ/m^2	**18.6** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=gPtgxCOld.
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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-004-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-004-01 A	G2.01	2700	2700	Sliding	45	NW	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	3800	NW		Yes
Liv/Kit	EW-004	2700	8000	SW		No
Entry/Ldy	EW-001	2700	2300	SE		Yes
Bed 1	EW-002	2700	3000	NW		Yes
Bath	EW-001	2700	2900	SE		Yes
Bath	EW-004	2700	2100	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	42.39	
IW-002	Plasterboard/AAC block	27.54	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	25.99			Carpet 10 + rubber underlay 8
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	9.00			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.81			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.90			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	6.83			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	13	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	5	Downlight		Sealed
Bath	2	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

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.
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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.
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.
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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918295

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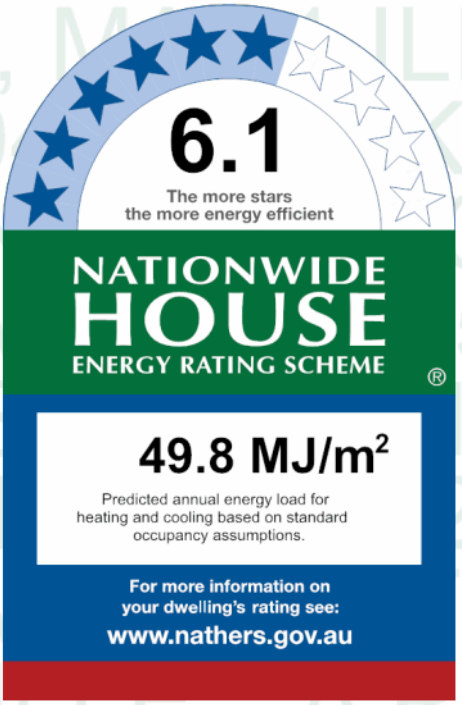

Property

Address	Unit 106, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	49.0	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	49.0	56
Garage		

Thermal performance

Heating	Cooling
30.4	**19.4**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

National Construction Code (NCC) requirements

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

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	SE	None

* Refer to glossary.

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
Entry/LDY	2100	820	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	2800	SE		Yes
Liv/Kit	EW-004	2700	7000	SW		No
Liv/Kit	EW-004	2700	800	SE		Yes
Entry/LDY	EW-001	2700	2300	NW		Yes
Entry/LDY	EW-004	2700	6000	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.45	
IW-002	Plasterboard/AAC block	42.39	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.63			Ceramic tile
Entry/LDY/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	13.84			Carpet 10 + rubber underlay 8
Entry/LDY/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	10.03			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.46			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/LDY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/LDY	5	Downlight		Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Entry/LDY	1	Ceiling exhaust fan	300	Sealed
Bed 1	4	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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.
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.
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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.
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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. 0007918303

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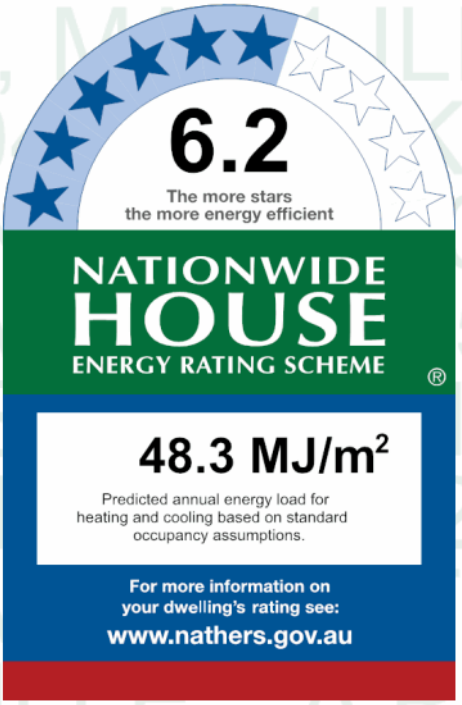

Property

Address	Unit 107, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	36.1	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	36.1	56
Garage		

Thermal performance

Heating	Cooling
19.4 MJ/m^2	**28.9** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=TXAcvbmEY.
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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

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	Aluminium B 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*
Liv/Kit	ALM-004-04 A	G2.01	2700	2700	Sliding	45	SE	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*

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
Entry/Ldy	2100	820	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	3600	SE		Yes
Entry/Ldy	EW-001	2700	1100	NW		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	26.19	
IW-002	Plasterboard/AAC block	61.02	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.75			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.17			Carpet 10 + rubber underlay 8
Entry/Ldy/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.02			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.15			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918311

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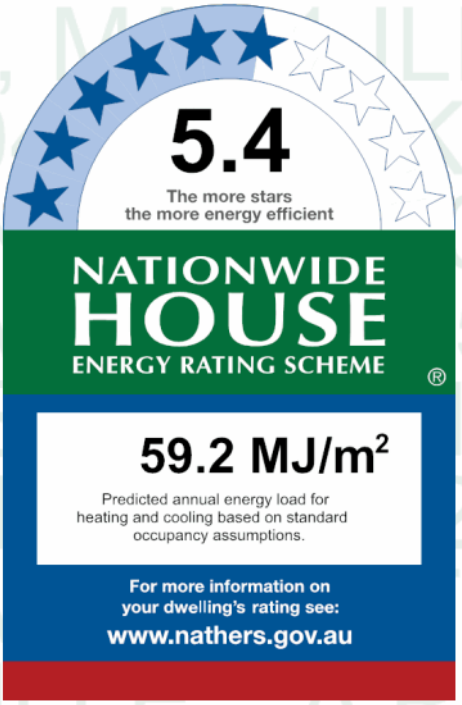

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NCC Class*	2
Type	New Home

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Prepared by	Benson McCormack Architecture

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Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	36.1	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	36.1	56
Garage		

Thermal performance

Heating	Cooling
33.6	**25.6**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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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".

Provisional* values

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

Additional notes

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.6	0.41	0.39	0.43

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*
Liv/Kit	ALM-002-04 A	G2.01	2700	2700	Sliding	45	SE	None
Liv/Kit	ALM-001-01 A	G2.04	600	900	Awning	90	NE	None

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
Entry/Ldy	2100	820	90	NE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	2800	SE		Yes
Liv/Kit	EW-004	2700	7200	NE		No
Liv/Kit	EW-004	2700	700	SE		Yes
Entry/Ldy	EW-004	2700	1600	NE		Yes
Entry/Ldy	EW-004	2700	1300	NE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	26.19	
IW-002	Plasterboard/AAC block	36.72	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.75			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.17			Carpet 10 + rubber underlay 8
Entry/Ldy/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.02			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.15			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	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.

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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.

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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.
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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.
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. 0007918337

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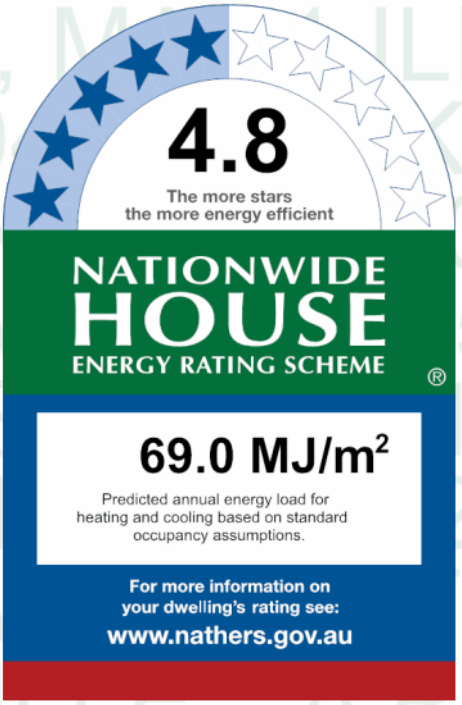

Property

Address	Unit 109, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	36.1	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	36.1	56
Garage		

Thermal performance

Heating	Cooling
40.3	**28.6**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=sdxEmnmAF.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E - Clear	4.3	0.53	0.50	0.56

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*
Liv/Kit	ALM-004-03 A	G2.01	2700	2700	Sliding	45	SE	None
Liv/Kit	ALM-001-01 A	G2.04	600	900	Awning	90	SW	None

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
Entry/Ldy	2100	820	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	2800	SE		Yes
Liv/Kit	EW-004	2700	7200	SW		No
Liv/Kit	EW-004	2700	700	SE		Yes
Entry/Ldy	EW-004	2700	1600	SW		Yes
Entry/Ldy	EW-004	2700	1300	SW		Yes
Bath	EW-001	2700	1500	NE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	26.19	
IW-002	Plasterboard/AAC block	31.86	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles +R2.5	19.75		R2.5	Ceramic tile
Entry/Ldy/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt +R2.5	4.17		R2.5	Carpet 10 + rubber underlay 8
Entry/Ldy/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles +R2.5	1.00		R2.5	Ceramic tile
Bed 1/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt +R2.5	7.02		R2.5	Carpet 10 + rubber underlay 8
Bath/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles +R2.5	4.15		R2.5	Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

Explanatory notes

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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.
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).
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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918345

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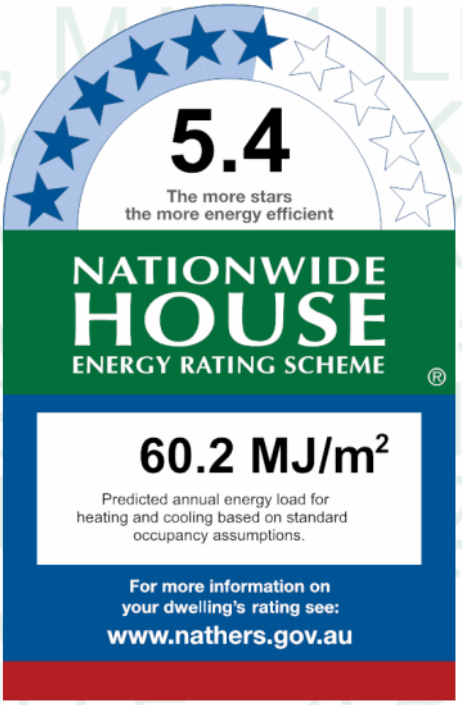

Property

Address	Unit 110, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	88.0	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	88.0	56
Garage		

Thermal performance

Heating	Cooling
44.8 MJ/m^2	15.4 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=gOceseoKG.
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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	SE	None
Bed 1	ALM-004-01 A	G2.10	2700	2700	Sliding	45	SE	None
Bed 2	ALM-004-01 A	G2.02	2400	900	Double Hung	22	SE	None
Bed 2	ALM-004-01 A	G2.02	2400	900	Double Hung	22	SE	None

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
Entry	2100	820	90	SW

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	4400	SE		Yes
Liv/Kit	EW-004	2700	2300	NE		Yes
Entry	EW-001	2700	1700	SW		Yes
Bed 1	EW-002	2700	3100	SE		Yes
Bed 1	EW-001	2700	1600	NW		Yes
Bath	EW-004	2700	1800	NE		Yes
Bed 2	EW-004	2700	1000	SE		Yes
Bed 2	EW-004	2700	4100	NE		No
Bed 2	EW-002	2700	1800	SE		Yes
lounge	EW-004	2700	2800	NW		Yes
lounge	EW-004	2700	2000	NE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	77.22	
IW-002	Plasterboard/AAC block	36.99	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles R1	27.36		R1.0	Ceramic tile
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	11.00			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.93			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	6.37			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.50			Carpet 10 + rubber underlay 8
Bed 1/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R1	11.93		R1.0	Carpet 10 + rubber underlay 8
Bath/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles R1	3.08		R1.0	Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.60			Ceramic tile
Bed 2/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R1	11.56		R1.0	Carpet 10 + rubber underlay 8
lounge/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R1	5.68		R1.0	Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 2	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	14	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	1	Downlight		Sealed
Bed 1	9	Downlight		Sealed
Bed 1	1	Ceiling exhaust fan	300	Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
Bed 2	5	Downlight		Sealed
lounge	2	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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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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.

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Glossary

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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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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. 0007918352

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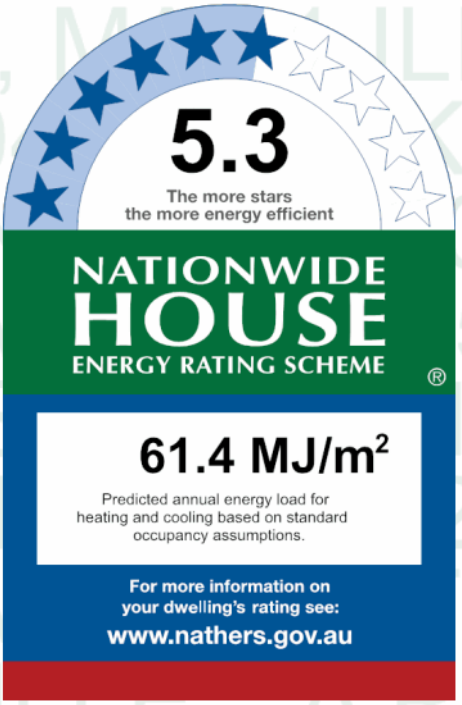

Property

Address	Unit 201, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	56.6	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	56.6	56
Garage		

Thermal performance

Heating	Cooling
34.0 MJ/m^2	**27.4** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=onZCvaoCt.
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

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	Aluminium B 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*
lounge	ALM-004-04 A	G2.05	2700	2400	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
lounge	ALM-004-04 A	G2.05	2700	2400	Sliding	45	NW	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry/Ldy	EW-001	2700	2400	SE		Yes
Bed 1	EW-004	2700	4500	NE		No
Bath	EW-004	2700	2100	NE		No
Bath	EW-001	2700	3500	SE		Yes
lounge	EW-002	2700	5400	NW		Yes
lounge	EW-004	2700	3600	NE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	47.79	
IW-002	Plasterboard/AAC block	27.54	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	8.84			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bed 1/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R1.	14.11		R1.0	Carpet 10 + rubber underlay 8
Bath/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles (+R1.	6.69		R1.0	Ceramic tile
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	0.60			Ceramic tile
lounge/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt + R1.	11.39		R1.0	Carpet 10 + rubber underlay 8
lounge/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.00			Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
kit	2	Downlight		Sealed
kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	2	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
lounge	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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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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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918360

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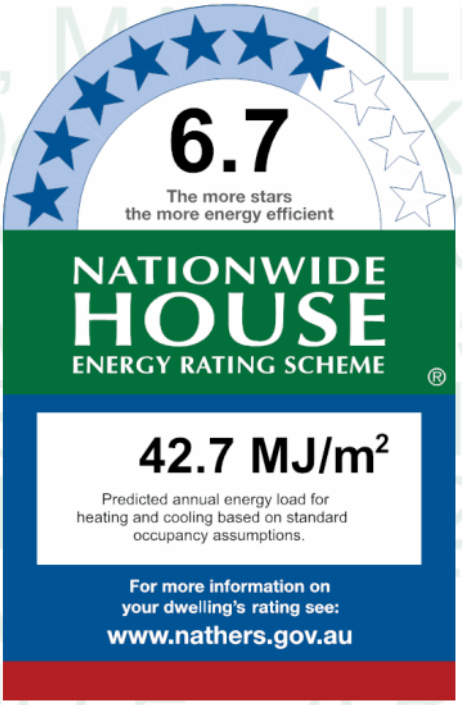

Property

Address	Unit 202, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	35.6	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	35.6	56
Garage		

Thermal performance

Heating	Cooling
17.4 MJ/m^2	25.3 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=tlmJsqKsa.
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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	54.27	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	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.

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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.
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
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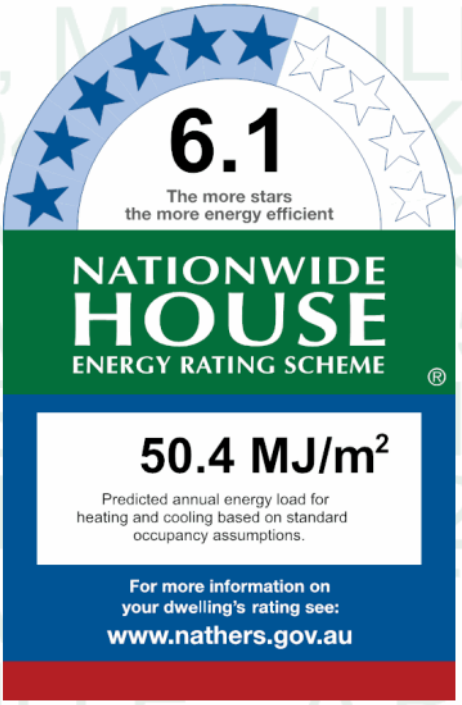

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Conditioned*	31.4	Suburban
Unconditioned*	4.2	**NatHERS climate zone**
Total	35.6	56
Garage		

Thermal performance

Heating	**Cooling**
23.4	**27.0**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

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

Additional notes

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Awning	90	SW	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes
Liv/Kit	EW-002	2700	3800	SW		No
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bed 1	EW-002	2700	3800	SW		No
Bath	EW-002	2700	2500	SW		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	27.00	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
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Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
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Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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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).
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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918386

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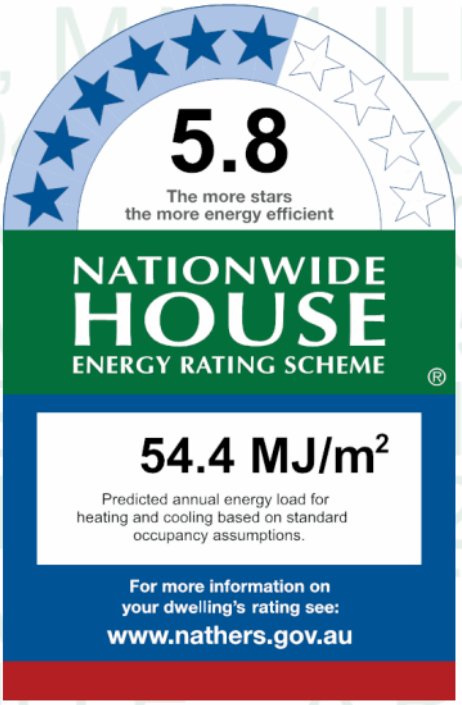

Property

Address	Unit 204, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	31.4	Suburban
Unconditioned*	4.2	**NatHERS climate zone**
Total	35.6	56
Garage		

Thermal performance

Heating	Cooling
26.9 MJ/m^2	27.5 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=SDRHgJNKE.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Awning	90	NE	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/Concrete wall	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes
Liv/Kit	EW-002	2700	3800	NE		No
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bed 1	EW-002	2700	3800	NE		No
Bath	EW-002	2700	2500	NE		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	27.00	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	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.

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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

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Disclaimer

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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. 0007918394

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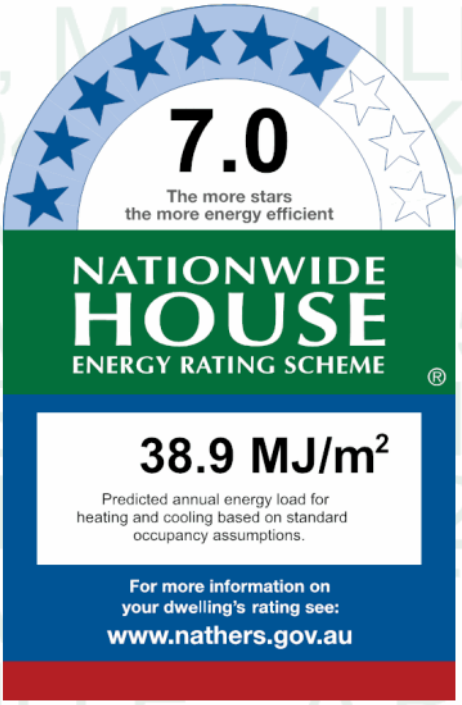

Property

Address	Unit 205, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	35.6	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	35.6	56
Garage		

Thermal performance

Heating	Cooling
15.3 MJ/m^2	**23.6** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

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National Construction Code (NCC) requirements

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/Concrete wall	30	Light	Glass fibre batt: R1.0	No
EW-004	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3600	NW		Yes

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry/Ldy	EW-001	2700	1600	SE		Yes
Bath	EW-001	2700	1800	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	62.91	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	19.24			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.11			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.20			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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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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. 0007918402

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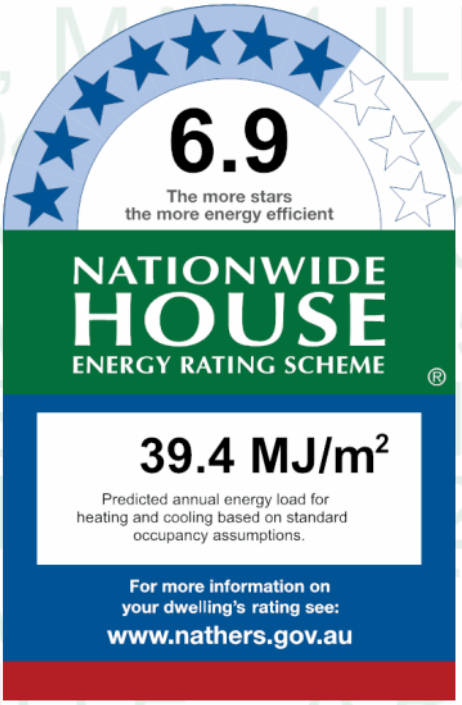

Property

Address	Unit 206, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	60.5	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	60.5	56
Garage		

Thermal performance

Heating	Cooling
19.1 MJ/m^2	**20.3** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=YQmAZQrCg.
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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-004-01 A	G2.01	2700	2700	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 1	ALM-004-01 A	G2.01	2700	2700	Sliding	45	NW	None

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
Entry/Ldy	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	50	Medium	Glass fibre batt: R2.0	No

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	3800	NW		Yes
Liv/Kit	EW-004	2700	8000	SW		No
Entry/Ldy	EW-001	2700	2300	SE		Yes
Bed 1	EW-002	2700	3000	NW		Yes
Bath	EW-001	2700	2900	SE		Yes
Bath	EW-004	2700	2100	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	42.39	
IW-002	Plasterboard/AAC block	27.54	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	25.99			Carpet 10 + rubber underlay 8
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	9.00			Ceramic tile
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.81			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.90			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	6.83			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	13	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	2	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	5	Downlight		Sealed
Bath	2	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918410

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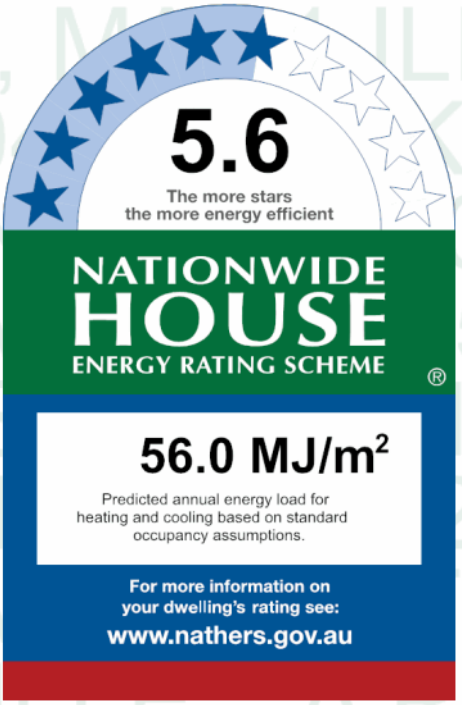

Property

Address	Unit 207, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	34.1	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	34.1	56
Garage		

Thermal performance

Heating	Cooling
29.0	**27.1**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=GBuGXScdb.
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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None

* Refer to glossary.

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
Entry	2100	820	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	1000	SE		No
Liv/Kit	EW-002	2700	6800	SW		No
Liv/Kit	EW-005	2700	2600	SE		Yes
Liv/Kit	EW-005	2700	500	SE		No
Entry	EW-001	2700	2300	NW		Yes
Entry	EW-004	2700	2800	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.99	
IW-002	Plasterboard/AAC block	31.05	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	11.07			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	5.89			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.67			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.50			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	5	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	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.

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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.
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).
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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918428

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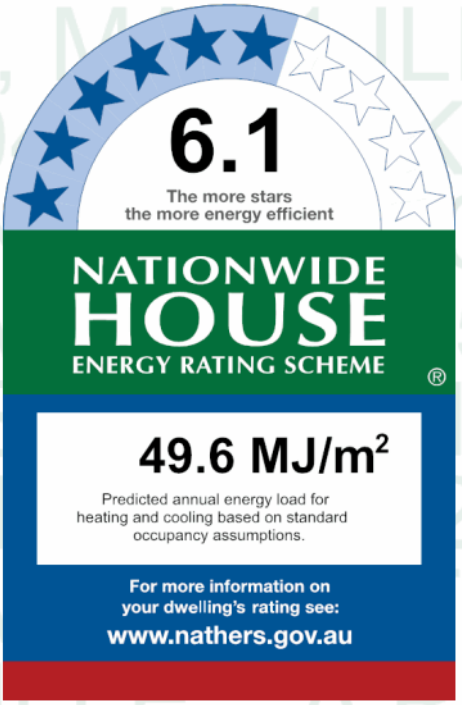

Property

Address	Unit 208, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	46.5	Suburban	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	46.5	56	
Garage			

Thermal performance

Heating	Cooling
27.8 MJ/m^2	21.8 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=faYZHBVnn.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None
Liv/Kit	ALM-001-01 A	G2.04	600	900	Awning	90	NE	None
Bed 1	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None

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
Entry	2100	820	90	NW

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	1000	SE		No
Liv/Kit	EW-002	2700	4600	NE		Yes
Liv/Kit	EW-005	2700	2600	SE		Yes
Liv/Kit	EW-005	2700	500	SE		No
Liv/Kit	EW-005	2700	500	SE		No
Liv/Kit	EW-002	2700	1700	NE		Yes
Entry	EW-001	2700	1000	NW		Yes
Bed 1	EW-005	2700	600	SE		No
Bed 1	EW-005	2700	600	SE		No
Bed 1	EW-005	2700	2600	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.99	
IW-002	Plasterboard/AAC block	32.94	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	24.48			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.40			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.60			Ceramic tile

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	9	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918436

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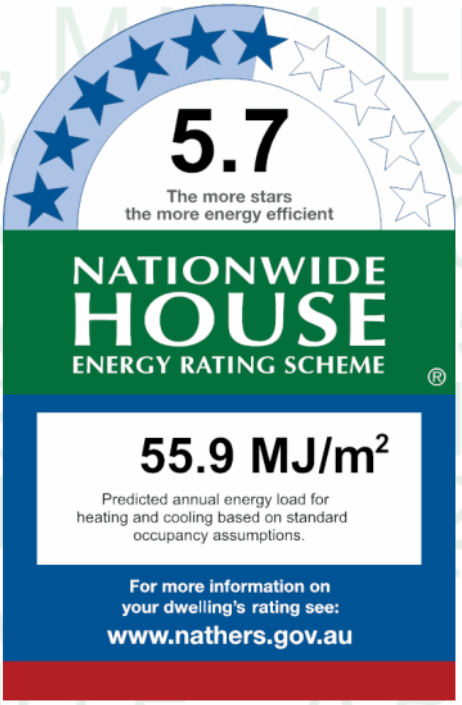

Property

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Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	46.5	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	46.5	56
Garage		

Thermal performance

Heating	Cooling
29.3 MJ/m^2	**26.6** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

About the rating

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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.

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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".

Provisional* values

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

Additional notes

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None
Liv/Kit	ALM-001-01 A	G2.04	600	900	Awning	90	SW	None
Bed 1	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None

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
Entry	2100	820	90	NW

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	1000	SE		No
Liv/Kit	EW-002	2700	4600	SW		Yes
Liv/Kit	EW-005	2700	2600	SE		Yes
Liv/Kit	EW-005	2700	500	SE		No
Liv/Kit	EW-005	2700	500	SE		No
Liv/Kit	EW-002	2700	1700	SW		Yes
Entry	EW-001	2700	1000	NW		Yes
Bed 1	EW-005	2700	600	SE		No
Bed 1	EW-005	2700	600	SE		No
Bed 1	EW-005	2700	2600	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.99	
IW-002	Plasterboard/AAC block	32.94	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	24.48			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.40			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.00			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.60			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	9	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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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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.

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Glossary

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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.
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. 0007918444

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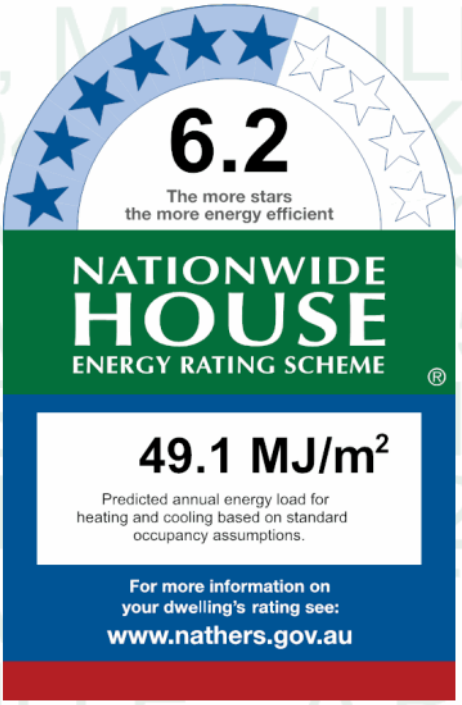

Property

Address	Unit 210, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	49.1	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	49.1	56
Garage		

Thermal performance

Heating	Cooling
29.9	**19.2**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=VjOUYpTOg.
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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74

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*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	SE	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-002-01 A	G2.07	2700	450	Double Hung	22	SE	None

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
Entry	2100	820	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	2600	SE		Yes
Liv/Kit	EW-005	2700	500	SE		No
Liv/Kit	EW-005	2700	500	SE		No
Entry	EW-001	2700	3100	NW		Yes
Entry	EW-002	2700	1600	NE		No
Bed 1	EW-005	2700	2500	SE		No
Bed 1	EW-002	2700	4700	NE		No
Bath	EW-002	2700	2300	NE		No
Bath	EW-002	2700	500	NE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	35.10	
IW-002	Plasterboard/AAC block	32.40	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	21.75			Ceramic tile
Liv/Kit/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles +R1	4.00		R1.0	Ceramic tile
Entry/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt +R1	5.88		R1.0	Carpet 10 + rubber underlay 8
Bed 1/Outdoor Air	as_FLOR-B003 #2001 © 200mm Concrete Floor slab with carpet-underfelt +R1	5.00		R1.0	Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.42			Carpet 10 + rubber underlay 8
Bath/Outdoor Air	as_FLOR-B003 #2005 © 200mm Concrete Floor slab with ceramic tiles +R1	6.03		R1.0	Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	10	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	2	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

Explanatory notes

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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.
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.
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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.
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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918451

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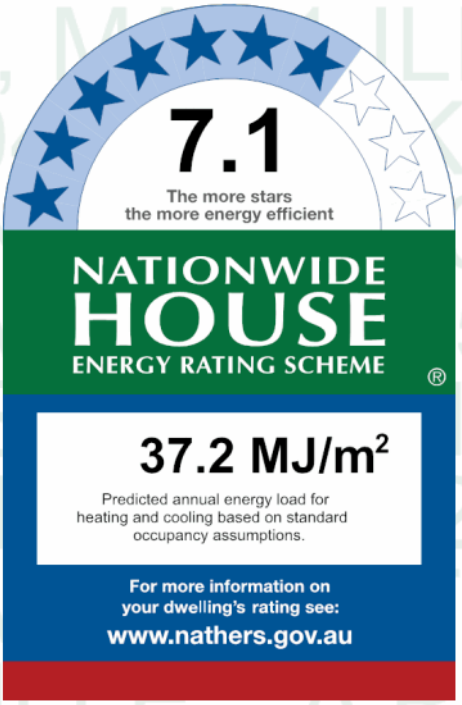

Property

Address	Unit 301, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	36.7	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	36.7	56
Garage		

Thermal performance

Heating	Cooling
12.0 MJ/m^2	**25.2** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

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National Construction Code (NCC) requirements

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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?

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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-04 A	Aluminium B 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*
Liv/Kit	ALM-004-04 A	G2.06	2700	2200	Sliding	45	NW	None
Bed 1	ALM-002-01 A	G2.07	2700	450	Double Hung	30	NW	None

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
Entry/Ldy	2100	900	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3000	NW		Yes
Liv/Kit	EW-001	2700	2800	SE		Yes
Entry/Ldy	EW-001	2700	1200	SE		Yes
Bed 1	EW-004	2700	2500	NW		No
Bed 1	EW-002	2700	3700	NE		No
Bath	EW-002	2700	2600	NE		No
Bath	EW-001	2700	1700	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	17.28	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	8.40			Ceramic tile
Liv/Kit/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.60			Carpet 10 + rubber underlay 8
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.09			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.31			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.34			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	8	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	1	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

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).

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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.

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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918469

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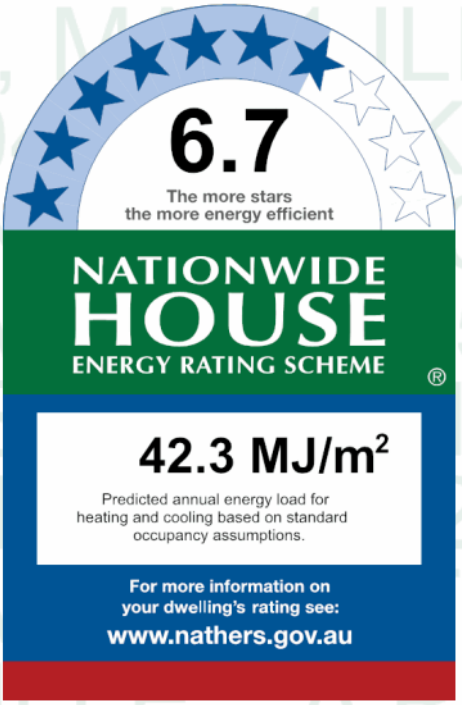

Property

Address	Unit 302, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	46.5	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	46.5	56
Garage		

Thermal performance

Heating	Cooling
17.1 MJ/m^2	**25.2** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=PGfArSXIT.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Casement	90	SW	None

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
Entry	2100	820	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	2600	NW		Yes
Liv/Kit	EW-005	2700	500	NW		No
Liv/Kit	EW-005	2700	500	NW		No
Liv/Kit	EW-001	2700	4000	SE		Yes
Entry	EW-001	2700	1200	SE		Yes
Bed 1	EW-005	2700	600	NW		No
Bed 1	EW-005	2700	600	NW		No
Bed 1	EW-005	2700	2600	NW		Yes
Bed 1	EW-002	2700	3200	SW		No
Bath	EW-002	2700	3000	SW		Yes
Bath	EW-001	2700	1900	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.99	
IW-002	Plasterboard/AAC block	32.94	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	24.34			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.94			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.66			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.60			Ceramic tile

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	9	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

Explanatory notes

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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.
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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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918485

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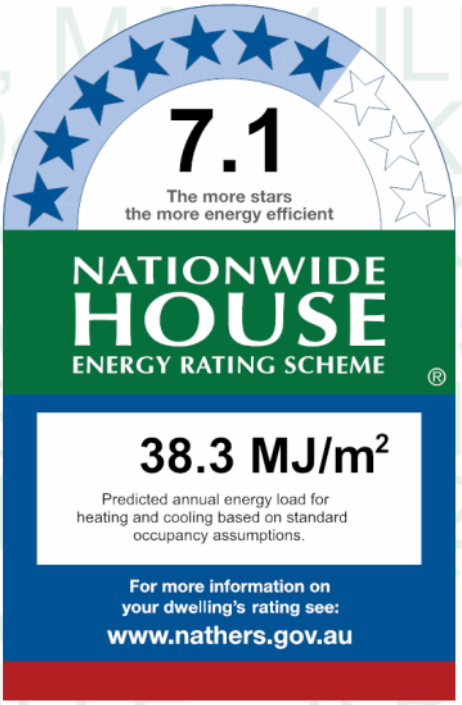

Property

Address	Unit 303, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	46.5	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	46.5	56
Garage		

Thermal performance

Heating	Cooling
17.1	**21.1**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=cjCpNNLAR.
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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-002-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bath	ALM-001-01 A	G2.03	900	450	Casement	90	NE	None

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
Entry	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-005	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-005	2700	2600	NW		Yes
Liv/Kit	EW-005	2700	500	NW		No
Liv/Kit	EW-005	2700	500	NW		No
Liv/Kit	EW-001	2700	4000	SE		Yes
Entry	EW-001	2700	1200	SE		Yes
Bed 1	EW-005	2700	600	NW		No
Bed 1	EW-005	2700	600	NW		No
Bed 1	EW-005	2700	2600	NW		Yes
Bed 1	EW-002	2700	3200	NE		No
Bath	EW-002	2700	3000	NE		Yes
Bath	EW-001	2700	1900	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	36.99	
IW-002	Plasterboard/AAC block	32.94	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	24.34			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.00			Ceramic tile
Entry/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.94			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.66			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.60			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	9	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry	2	Downlight		Sealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

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

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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.
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. 0007918493

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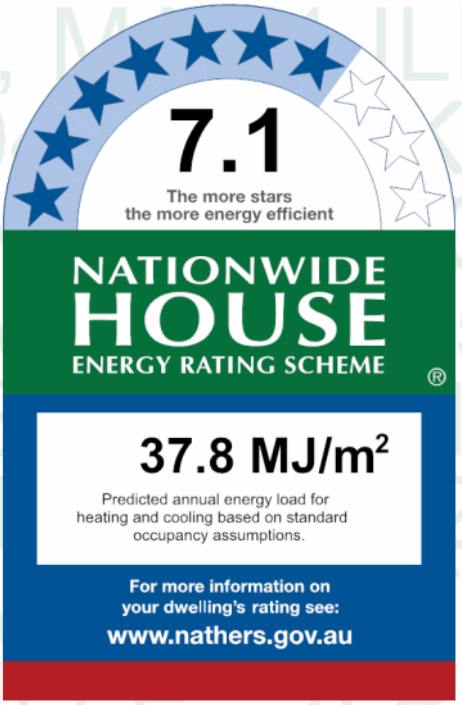

Property

Address	Unit 304, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	37.7	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	37.7	56
Garage		

Thermal performance

Heating	Cooling
13.3 MJ/m^2	**24.5** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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?

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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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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Liv/Kit	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bed 1	ALM-002-01 A	G2.07	2700	450	Double Hung	30	NW	None

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
Entry/Ldy	2100	900	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	3000	NW		Yes
Liv/Kit	EW-001	2700	2800	SE		Yes
Entry/Ldy	EW-001	2700	1200	SE		Yes
Bed 1	EW-004	2700	2500	NW		No
Bed 1	EW-002	2700	3700	SW		No
Bath	EW-002	2700	2600	SW		No
Bath	EW-001	2700	1700	SE		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	31.32	
IW-002	Plasterboard/AAC block	17.28	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	8.40			Ceramic tile
Liv/Kit/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	13.60			Carpet 10 + rubber underlay 8
Entry/Ldy/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.09			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.31			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.34			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Entry/Ldy	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bed 1	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Neighbour/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	8	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Entry/Ldy	1	Downlight		Sealed
Entry/Ldy	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

Explanatory notes

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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.
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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918501

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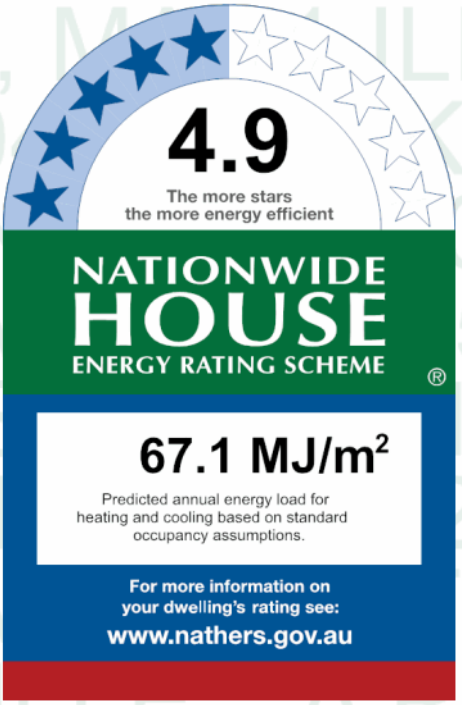

Property

Address	Unit 305, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	54.1	Open
Unconditioned*	4.2	**NatHERS climate zone**
Total	58.4	56
Garage		

Thermal performance

Heating	Cooling
41.9	**25.2**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27	0.26	0.28

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*
Liv/Kit	ATB-004-04 B	G2.06	2700	2200	Sliding	45	SE	None
Bed 1	ATB-004-04 B	G2.06	2700	2200	Sliding	45	SE	None
Bath	ALM-001-01 A	G2.04	600	900	Awning	90	NE	None
LIV	ATB-004-04 B	G2.06	2700	2200	Sliding	45	SE	None

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
HALL	2100	900	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	7000	SW		No
Liv/Kit	EW-004	2700	1300	SE		No
Liv/Kit	EW-001	2700	2400	NW		Yes
Liv/Kit	EW-004	2700	2600	SE		Yes
HALL	EW-001	2700	1200	SE		Yes
Bed 1	EW-002	2700	2700	NE		Yes
Bed 1	EW-004	2700	1100	SE		No
Bed 1	EW-004	2700	2600	SE		Yes
Bed 1	EW-004	2700	500	SE		No
Bath	EW-002	2700	1600	NE		Yes
LIV	EW-004	2700	1100	SE		No
LIV	EW-004	2700	2600	SE		Yes
LIV	EW-001	2700	1100	NW		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	38.88	
IW-002	Plasterboard/AAC block	20.52	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	23.84			Ceramic tile
HALL/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	2.27			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.61			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.22			Ceramic tile
LIV/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	16.41			Carpet 10 + rubber underlay 8

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	9	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
HALL	1	Downlight		Sealed
HALL	1	Ceiling exhaust fan	300	Sealed
Bed 1	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
LIV	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R4.0 insulation under slab - Susp. Ceiling under	R4.0	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

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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.

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Disclaimer

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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. 0007918519

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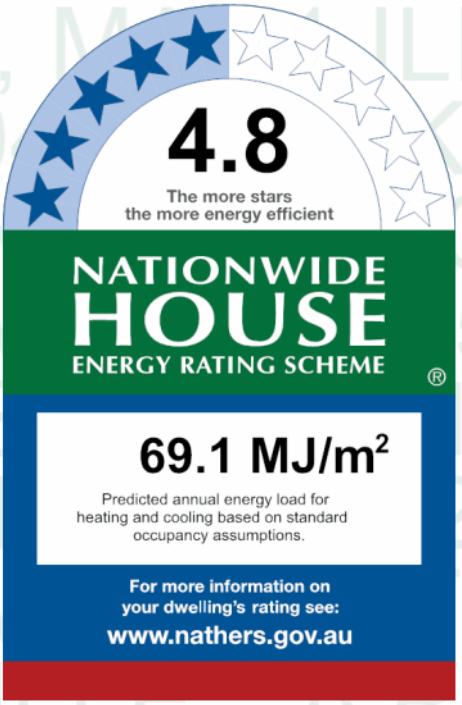

Property

Address	Unit 306, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	27.4	Open
Unconditioned*	4.8	**NatHERS climate zone**
Total	32.2	56
Garage		

Thermal performance

Heating	Cooling
43.4 MJ/m^2	**25.7** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

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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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-004-04 A	Aluminium B 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*
Liv/Kit	ALM-004-04 A	G2.06	2700	2200	Sliding	45	SE	None
Bed 1	ALM-004-04 A	G2.06	2700	2200	Sliding	45	SE	None
Bath	ALM-001-01 A	G2.04	600	900	Awning	90	SW	None

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
Liv/Kit	2100	820	90	NW

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-004	2700	1100	SE		No
Liv/Kit	EW-001	2700	2400	NW		Yes
Liv/Kit	EW-004	2700	2600	SE		Yes
Liv/Kit	EW-004	2700	500	SE		No
Bed 1	EW-002	2700	2700	SW		Yes
Bed 1	EW-004	2700	2600	SE		Yes
Bed 1	EW-004	2700	600	SE		No
Bath	EW-002	2700	1600	SW		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	18.63	
IW-002	Plasterboard/AAC block	24.57	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	18.53			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.85			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.83			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.50 insulation under slab - Susp. Ceiling under	R2.5	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.
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. 0007918535

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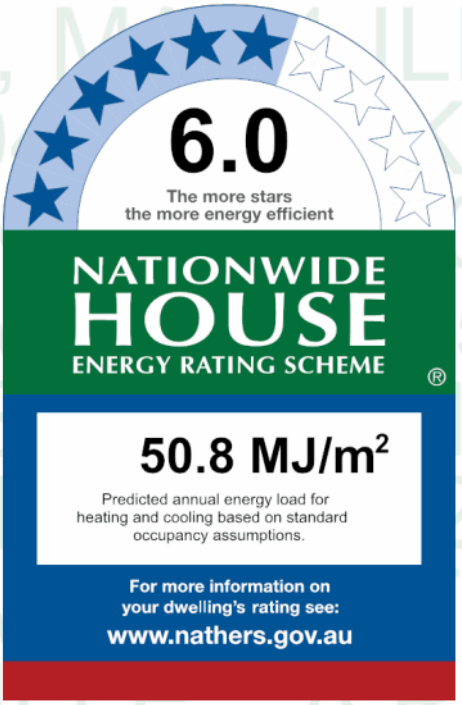

Property

Address	Unit 307, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	36.1	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	36.1	56
Garage		

Thermal performance

Heating	Cooling
21.7 MJ/m^2	**29.2** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27	0.26	0.28

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	ALM-004-04 A	G2.07	2700	450	Double Hung	25	SE	None
LOUNGE	ATB-004-04 B	G2.06	2700	2200	Sliding	45	SE	None

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
Liv/Kit	2100	820	90	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Liv/Kit	EW-002	2700	3600	NE		No
Liv/Kit	EW-001	2700	3000	NW		Yes
Bed 1	EW-002	2700	3400	NE		No
Bed 1	EW-004	2700	2200	SE		No
LOUNGE	EW-004	2700	1200	SE		No
LOUNGE	EW-004	2700	2600	SE		Yes
LOUNGE	EW-004	2700	500	SE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	29.97	
IW-002	Plasterboard/AAC block	26.19	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Liv/Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	13.41			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	7.23			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.40			Ceramic tile
LOUNGE/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.06			Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Neighbour/Liv/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Liv/Kit	6	Downlight		Sealed
Liv/Kit	1	Ceiling exhaust fan	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 1	2	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
LOUNGE	4	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R4.00 insulation under slab - Susp. Ceiling under	R4.0	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

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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918543

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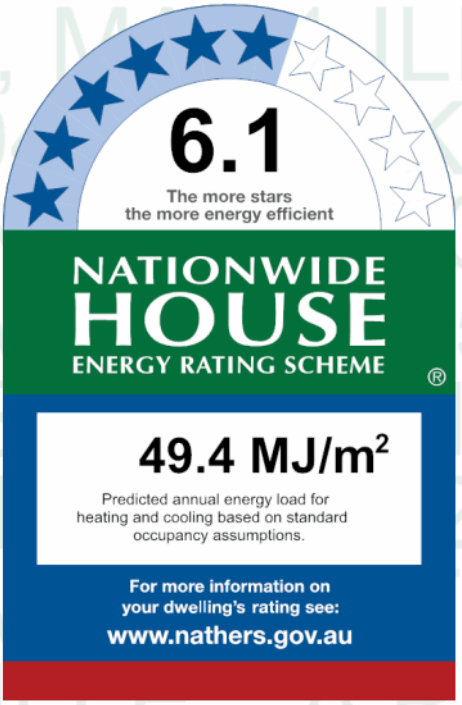

Property

Address	Unit 401, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	82.2	Open	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	82.2	56	
Garage			

Thermal performance

Heating	**Cooling**
20.0 MJ/m^2	**29.4** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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?

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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.

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

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	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.9	0.33	0.31	0.35
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27	0.26	0.28

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 2	ATB-004-04 B	G2.06	2700	2200	Sliding	45	NW	None
lounge	ATB-004-04 B	G2.06	2700	2200	Sliding	45	NW	None
lounge	ALM-004-04 A	G2.07	2700	450	Double Hung	30	NW	None
Bed 1	ATB-004-04 B	G2.06	2700	2200	Sliding	45	SE	None
landing	ALM-004-04 A	G2.07	2700	450	Double Hung	30	NW	None

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
SG-Generic-01 A	Clear Al SG DEFAULT ROOF WINDOW System 01	7.3	0.79	0.75	0.83

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
Bed 1	SG-Generic-01 A	SKY	90	632	632	E	None	None

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
lounge	2100	820	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit	EW-002	2700	2500	NE		No
Kit	EW-001	2700	2600	SE		Yes
Bed 2	EW-004	2700	2600	NW		Yes
Bed 2	EW-004	2700	500	NW		No
Bath	EW-002	2700	1500	NE		No
lounge	EW-001	2700	3200	SE		Yes
lounge	EW-004	2700	500	NW		No
lounge	EW-004	2700	2600	NW		Yes
lounge	EW-004	2700	2500	NW		No
lounge	EW-002	2700	4000	NE		No
Bed 1	EW-002	2700	1300	NE		No
Bed 1	EW-004	2700	2000	SE		No
Bed 1	EW-004	2700	3900	SE		Yes
landing	EW-004	2700	2500	NW		No
landing	EW-002	2700	5800	NE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	56.43	
IW-002	Plasterboard/AAC block	40.50	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	6.08			Ceramic tile
Bed 2/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.99			Carpet 10 + rubber underlay 8
Bath/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.96			Ceramic tile
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	1.93			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
lounge/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	30.67			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	3.57			Ceramic tile
Bed 1/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.90			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.68			Carpet 10 + rubber underlay 8
landing/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.12			Ceramic tile
landing/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.78			Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No
landing/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No
Bed 2/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Bed 1/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
landing/lounge	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit	2	Downlight		Sealed
Kit	1	Ceiling exhaust fan	300	Sealed
Bed 2	5	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
lounge	12	Downlight		Sealed
Bed 1	6	Downlight		Sealed
Bed 1	1	Ceiling exhaust fan	300	Sealed
landing	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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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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
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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.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918550

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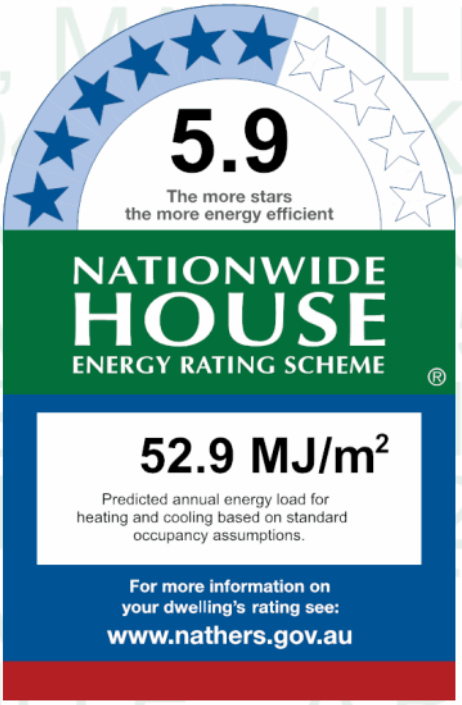

Property

Address	Unit 402, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	49.9	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	49.9	56
Garage		

Thermal performance

Heating	Cooling
26.0 MJ/m^2	**26.9** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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=kOJaALaRu.
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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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	SE	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

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
SG-Generic-01 A	Clear Al SG DEFAULT ROOF WINDOW System 01	7.3	0.79	0.75	0.83

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
Kit/LIV	SG-Generic-01 A	SKY	90	632	632	NE	None	None

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
ENTRY	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	2600	NW		Yes
Kit/LIV	EW-004	2700	3100	SE		Yes
Bath	EW-001	2700	1500	SE		Yes
ENTRY	EW-001	2700	2000	SE		Yes
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	2600	NW		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	19.44	
IW-002	Plasterboard/AAC block	82.35	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	12.00			Ceramic tile
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.85			Carpet 10 + rubber underlay 8
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
Kit/LIV/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.63			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	3.85			Ceramic tile
ENTRY/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
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Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

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Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
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Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit/LIV	12	Downlight		Sealed
Kit/LIV	2	Ceiling exhaust fan	300	Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
ENTRY	6	Downlight		Sealed
Bed 1	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918568

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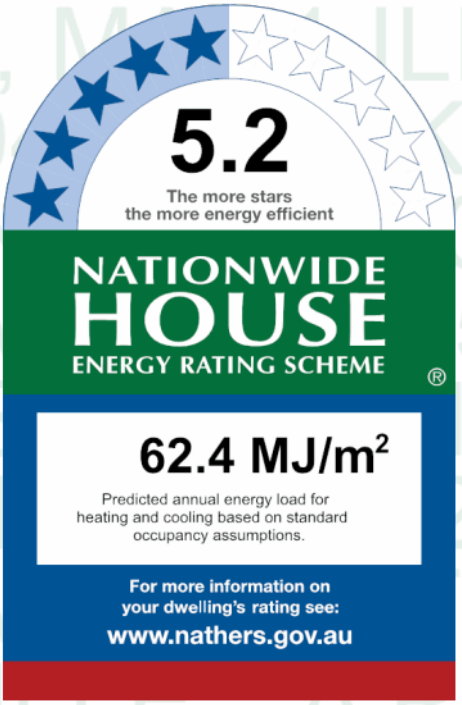

Property

Address	Unit 403, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	52.7	Open	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	52.7	56	
Garage			

Thermal performance

Heating	Cooling
36.8 MJ/m^2	25.6 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

About the rating

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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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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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Kit/LIV	ALM-004-01 A	G2.08	2700	2000	Sliding	45	SE	None
Kit/LIV	ALM-001-01 A	G2.03	900	450	Awning	90	SW	None
ENTRY	ALM-001-01 A	G2.03	900	450	Awning	90	SW	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

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
ENTRY	2100	820	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	2600	NW		Yes
Kit/LIV	EW-004	2700	2600	SE		Yes
Kit/LIV	EW-004	2700	6500	SW		No
Kit/LIV	EW-004	2700	600	NW		No
Bath	EW-001	2700	1500	SE		Yes
ENTRY	EW-001	2700	2000	SE		Yes
ENTRY	EW-004	2700	3700	SW		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	2600	NW		Yes
Bed 1	EW-004	2700	2700	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	19.44	
IW-002	Plasterboard/AAC block	50.76	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	12.00			Ceramic tile
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.85			Carpet 10 + rubber underlay 8
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
Kit/LIV/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	11.48			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	3.85			Ceramic tile
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* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit/LIV	12	Downlight		Sealed
Kit/LIV	2	Ceiling exhaust fan	300	Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
ENTRY	6	Downlight		Sealed
Bed 1	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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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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.

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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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918576

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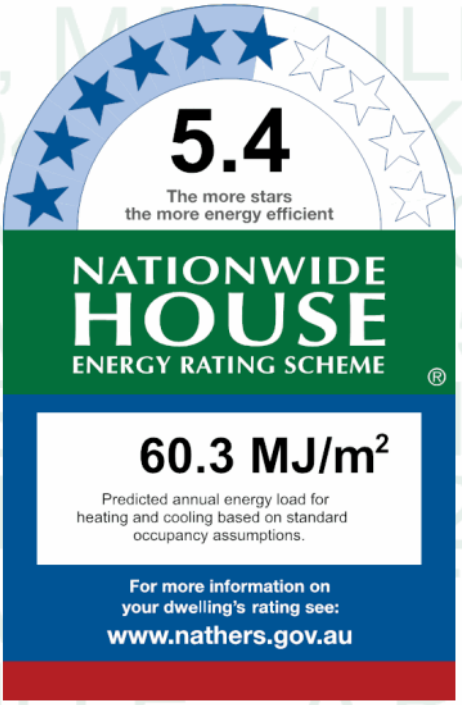

Property

Address	Unit 404, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	52.7	Open	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	52.7	56	
Garage			

Thermal performance

Heating	Cooling
34.8 MJ/m^2	**25.5** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Kit/LIV	ALM-004-01 A	G2.08	2700	2000	Sliding	45	SE	None
Kit/LIV	ALM-001-01 A	G2.03	900	450	Awning	90	NE	None
ENTRY	ALM-001-01 A	G2.03	900	450	Awning	90	NE	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

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
ENTRY	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	2600	NW		Yes
Kit/LIV	EW-004	2700	2600	SE		Yes
Kit/LIV	EW-004	2700	6500	NE		No
Kit/LIV	EW-004	2700	600	NW		No
Bath	EW-001	2700	1500	SE		Yes
ENTRY	EW-001	2700	2000	SE		Yes
ENTRY	EW-004	2700	3700	NE		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	2600	NW		Yes
Bed 1	EW-004	2700	2700	NE		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	19.44	
IW-002	Plasterboard/AAC block	50.76	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	12.00			Ceramic tile
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.85			Carpet 10 + rubber underlay 8
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
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Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit/LIV	12	Downlight		Sealed
Kit/LIV	2	Ceiling exhaust fan	300	Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
ENTRY	6	Downlight		Sealed
Bed 1	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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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.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918584

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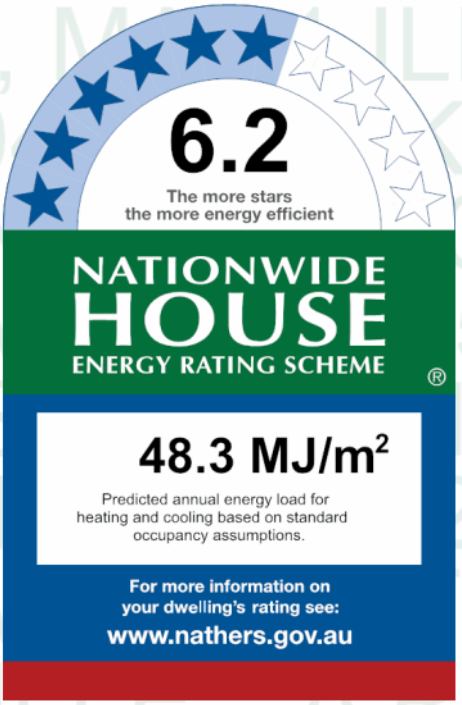

Property

Address	Unit 405, 315-321 Illawarra Road , Marrickville , NSW , 2204
Lot/DP	Lot 15-16 DP 6126
NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**	
Conditioned*	49.9	Open	
Unconditioned*	0.0	**NatHERS climate zone**	
Total	49.9	56	
Garage			

Thermal performance

Heating	**Cooling**
26.3 MJ/m^2	**22.0** MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

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

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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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/LIV	ALM-004-01 A	G2.06	2700	2200	Sliding	45	SE	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None

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
SG-Generic-01 A	Clear Al SG DEFAULT ROOF WINDOW System 01	7.3	0.79	0.75	0.83

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
Kit/LIV	SG-Generic-01 A	SKY	90	632	632	SW	None	None

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
ENTRY	2100	820	90	SE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No

* Refer to glossary.

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	500	NW		No
Kit/LIV	EW-004	2700	2600	NW		Yes
Kit/LIV	EW-004	2700	3100	SE		Yes
Bath	EW-001	2700	1500	SE		Yes
ENTRY	EW-001	2700	2000	SE		Yes
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	500	NW		No
Bed 1	EW-004	2700	2600	NW		Yes

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	19.44	
IW-002	Plasterboard/AAC block	82.35	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	12.00			Ceramic tile
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	3.85			Carpet 10 + rubber underlay 8
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
Kit/LIV/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	8.63			Carpet 10 + rubber underlay 8
Bath/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	3.85			Ceramic tile
ENTRY/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	6.26			Carpet 10 + rubber underlay 8
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	12.00			Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/Bath	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/LIV/ENTRY	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Kit/LIV/Bed 1	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit/LIV	12	Downlight		Sealed
Kit/LIV	2	Ceiling exhaust fan	300	Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
ENTRY	6	Downlight		Sealed
Bed 1	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

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).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007918592

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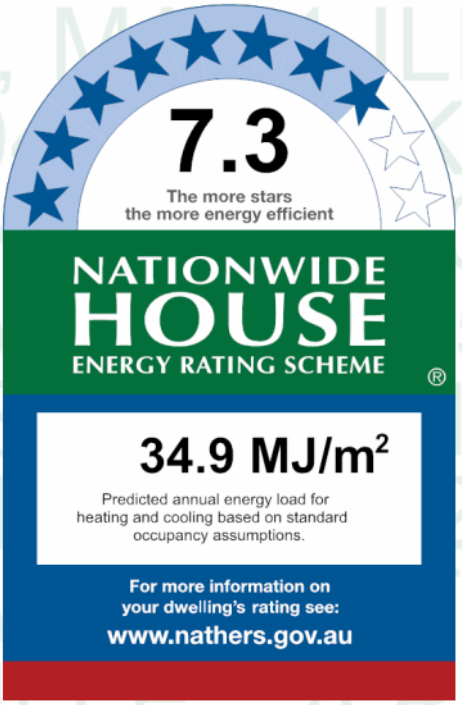

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NCC Class*	2
Type	New Home

Plans

Main Plan	1452A
Prepared by	Benson McCormack Architecture

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	82.3	Open
Unconditioned*	0.0	**NatHERS climate zone**
Total	82.3	56
Garage		

Thermal performance

Heating	Cooling
22.6 MJ/m^2	12.3 MJ/m^2

Accredited assessor

Name	Frances Turrisi
Business name	GAT & Associates Pty Ltd
Email	frances@gatassoc.com.au
Phone	(02) 9569 1100
Accreditation No.	20399

Assessor Accrediting Organisation

ABSA

Declaration of interest No potential conflicts of interest to declare

About the rating

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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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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

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	Aluminium B SG Clear	6.7	0.70	0.67	0.74
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Kit	ALM-002-01 A	G2.07	2700	450	Double Hung	30	NW	None
Bed 2	ALM-004-01 A	G2.06	2700	2200	Sliding	45	NW	None
Bed 1	ALM-004-01 A	G2.06	2700	2200	Sliding	45	SE	None
landing	ALM-002-01 A	G2.07	2700	450	Double Hung	30	NW	None

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
SG-Generic-01 A	Clear Al SG DEFAULT ROOF WINDOW System 01	7.3	0.79	0.75	0.83

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
Bed 1	SG-Generic-01 A	SKY	90	632	632	S	None	None

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
Kit	2100	820	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Plasterboard/AAC block	30	Light	Glass fibre batt: R1.0	No
EW-002	Brick wall/Plasterboard	85	Dark	Glass fibre batt: R2.0	No
EW-004	Plasterboard	85	Dark	Glass fibre batt: R2.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit	EW-002	2700	6500	SW		No
Kit	EW-001	2700	5500	SE		Yes
Kit	EW-004	2700	500	NW		No
Kit	EW-004	2700	2600	NW		Yes
Kit	EW-004	2700	3200	NW		No
Bed 2	EW-004	2700	2600	NW		Yes
Bed 2	EW-004	2700	500	NW		No
Bed 2	EW-004	2700	500	NW		No
Bed 1	EW-002	2700	3700	SW		No
Bed 1	EW-004	2700	1200	SE		No
Bed 1	EW-004	2700	3900	SE		Yes
landing	EW-004	2700	2500	NW		No
landing	EW-002	2700	4900	SW		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	42.93	
IW-002	Plasterboard/AAC block	40.77	

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Neighbour	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	7.50			Ceramic tile
Kit/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	30.59			Carpet 10 + rubber underlay 8
Bed 2/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	10.72			Carpet 10 + rubber underlay 8
Bath/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.38			Ceramic tile
Bed 1/Neighbour	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	9.62			Carpet 10 + rubber underlay 8
Bed 1/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	4.22			Ceramic tile

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)	4.23			Carpet 10 + rubber underlay 8
landing/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)	14.54			Ceramic tile

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No
landing/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No
Bed 2/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No
Bed 1/Kit	as_FLOR-B006 #1005 © 200mm Concrete Floor slab with ceramic tiles (no insul)		No
Bed 1/Kit	as_FLOR-B006 #1001 © 200mm Concrete Floor slab with carpet-underfelt(no insul)		No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kit	14	Downlight		Sealed
Kit	1	Ceiling exhaust fan	300	Sealed
Bed 2	4	Downlight		Sealed
Bath	1	Downlight		Sealed
Bath	1	Ceiling exhaust fan	300	Sealed
Bed 1	6	Downlight		Sealed
Bed 1	1	Ceiling exhaust fan	300	Sealed
landing	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #2047 © Concrete slab 200mm - WP Membrane surface - R2.5 insulation under slab - Susp. Ceiling under	R2.5	50	Medium

* Refer to glossary.

Explanatory notes

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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).