

Nationwide House Energy Rating Scheme — Class 2 summary

NatHERS Certificate No. 0008792960

Generated on 08 Nov 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address 7,9 Brighton St and 21 Charles St,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NatHERS climate zone 56

Accredited assessor



Dean Gorman

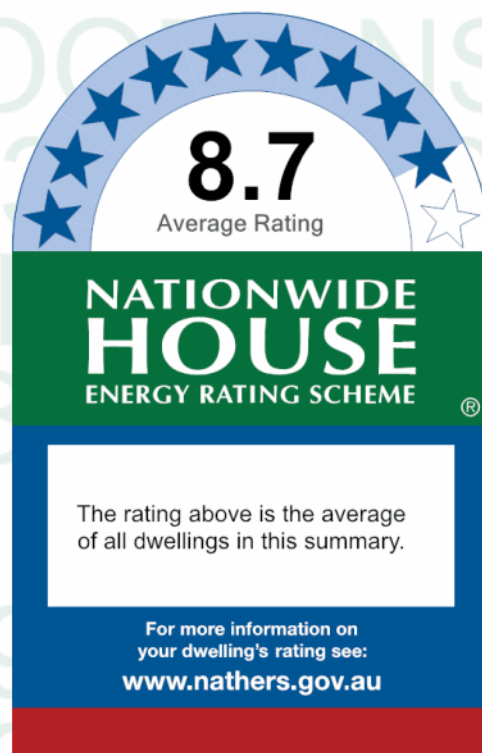
Greenview Consulting Pty Ltd

dean@greenview.net.au

8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National



Verification

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

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0008792913	1	1.1	3.7	4.8	10
0008792889-01	2	1.3	2.5	3.9	10
0008792863	3	3.9	3.1	7	9.8
0008792822	4	13.8	2.9	16.7	8.8
0008792954	5	27	1.5	28.5	7.8

National Construction Code (NCC) requirements

Continued Over

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.

Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0008792939	6	13.6	3.6	17.2	8.7
0008792897	7	6.8	3.2	10	9.4
0008792855	8	4.9	10	14.9	8.9
0008792848-01	9	7.3	9.2	16.4	8.8
0008792947	10	12	7.5	19.5	8.5
0008792921	11	22.1	9.8	31.9	7.5
0008792905	12	29	5.7	34.7	7.3
0008792871	13	15.7	5.6	21.4	8.4
0008792830	14	14.2	9	23.2	8.2
Average		12.34	5.52	17.86	8.72

Explanatory notes

About this ratings

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

Accredited Assessors

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

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

Disclaimer

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008792913

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 1, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

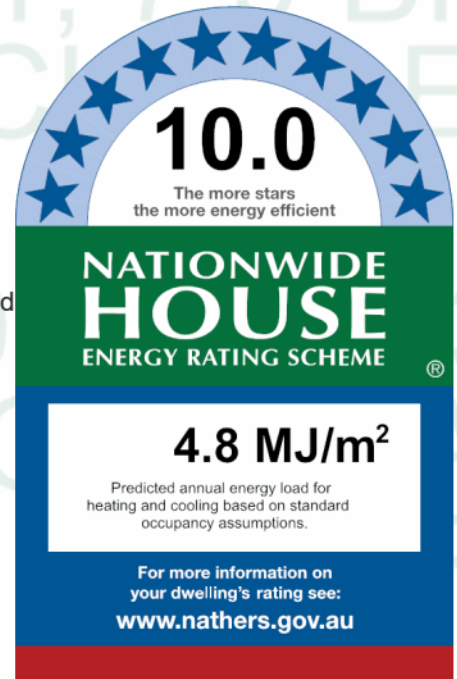
Name Dean Gorman
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Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
1.1	3.7
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	N	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3200	N	200	NO
Bedroom 1	EW-1	2700	1400	E	8300	YES
Bedroom 1	EW-1	2700	4245	W	300	NO
Bath	EW-1	2700	2290	W	300	NO
Kitchen/Living	EW-1	2700	3945	N	3500	YES
Kitchen/Living	EW-1	2700	1100	E	4300	NO
Kitchen/Living	EW-1	2700	645	W	300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		37.00	No insulation
IW-2 - Cavity brick, plasterboard		39.00	No Insulation

Floor type

Location	Construction	Area Sub-floor ventilation (m ²)	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	13.40 None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab on Ground 450mm	7.20 None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	28.40 None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 450mm	5.30	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

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

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the operability 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. 0008792889-01

Generated on 08 Nov 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 2, 7,9 Brighton St and 21 Charles St,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

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.

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Thermal performance

Heating	Cooling
1.3	2.5
MJ/m ²	MJ/m ²

About the rating

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Certificate check

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Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
Bedroom 1	ALM-004-01 A	n/a	1500	980	n/a	22	N	No
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	E	No
Bath	ALM-004-01 A	n/a	1200	970	n/a	22	E	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No
Bedroom 2	ALM-004-01 A	n/a	1500	970	n/a	22	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
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No Data Available

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4300	N	300	NO
Bedroom 1	EW-1	2700	3145	E	1400	NO
Bedroom 1	EW-1	2700	2000	W	4500	YES
Bath	EW-1	2700	3345	E	200	NO
Bath	EW-1	2700	800	S	300	YES
Kitchen/Living	EW-1	2700	4045	N	3400	YES
Bedroom 2	EW-1	2700	3245	E	300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		56.00	No insulation
IW-2 - Cavity brick, plasterboard		67.00	No Insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	13.50	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab on Ground 450mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	31.90	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	6.70	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab on Ground 450mm	5.90	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 450mm	11.20	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

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

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	3	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

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

Explanatory notes

About this report

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

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

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

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Glossary

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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. 0008792863

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 3, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

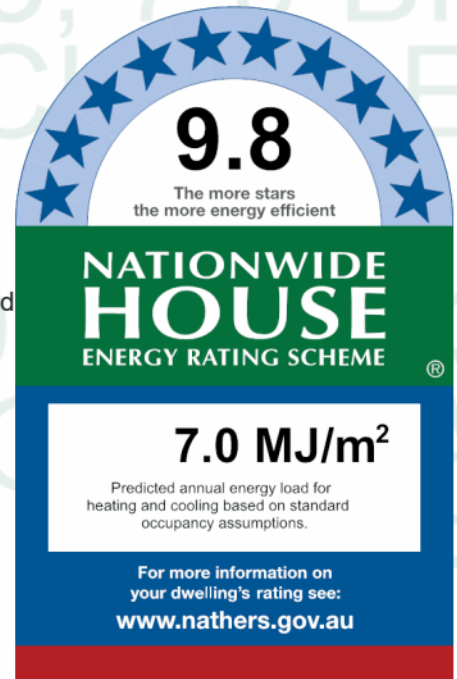
Name Dean Gorman
Business name Greenview Consulting Pty Ltd
Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
3.9	3.1
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	E	No
Bath	ALM-004-01 A	n/a	2000	985	n/a	22	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	E	No
Bedroom 2	ALM-004-01 A	n/a	1500	985	n/a	22	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3000	N	4300	YES
Bedroom 1	EW-1	2700	3300	E	300	NO
Bedroom 1	EW-1	2700	4145	S	200	YES
Bath	EW-1	2700	700	E	200	YES
Bath	EW-1	2700	3400	S	300	NO
Bath	EW-1	2700	500	W	10900	YES
Kitchen/Living	EW-1	2700	4245	E	3300	YES
Bedroom 2	EW-2	2700	3145	S	400	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		53.00	No insulation
IW-2 - Cavity brick, plasterboard		67.00	No Insulation

Floor type

Location	Construction	Area Sub-floor ventilation (m ²)	Added insulation (R-value)	Covering	
Bedroom 1	Concrete Slab on Ground 450mm	13.60	None	No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath	Concrete Slab on Ground 450mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	33.00	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab on Ground 450mm	6.60	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab on Ground 450mm	4.90	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 450mm	10.80	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	No insulation	No
Bath	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Entry	Concrete, Plasterboard	No insulation	No
Hall	Concrete, Plasterboard	No insulation	No
Bedroom 2	Concrete, Plasterboard	No insulation	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	2	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

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

Explanatory notes

About this report

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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. 0008792822

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 4, 7,9 Brighton St and 21 Charles St , Riverwood
, NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

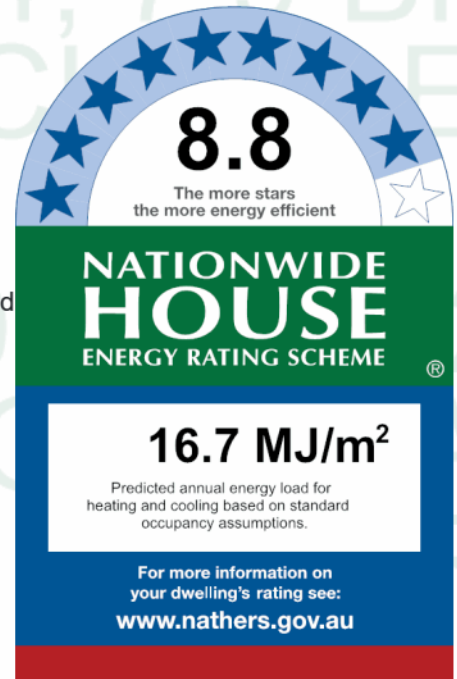
Declaration of interest Declaration completed: no conflicts

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Thermal performance

Heating	Cooling
13.8	2.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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Certificate check

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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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

No Data Available

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	1300	E	4200	YES
Bedroom 1	EW-1	2700	3300	S	300	NO
Bedroom 1	EW-1	2700	1600	W	200	NO
Kitchen/Living	EW-1	2700	1100	E	200	NO
Kitchen/Living	EW-1	2700	3945	S	3300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		37.00	No insulation
IW-2 - Cavity brick, plasterboard		54.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	13.50	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab on Ground 450mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	28.00	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	5.00	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

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

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

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

Explanatory notes

About this report

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

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

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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

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 operability 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. 0008792954

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 5, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 67.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 75.0	56
Garage 0.0	



Accredited assessor

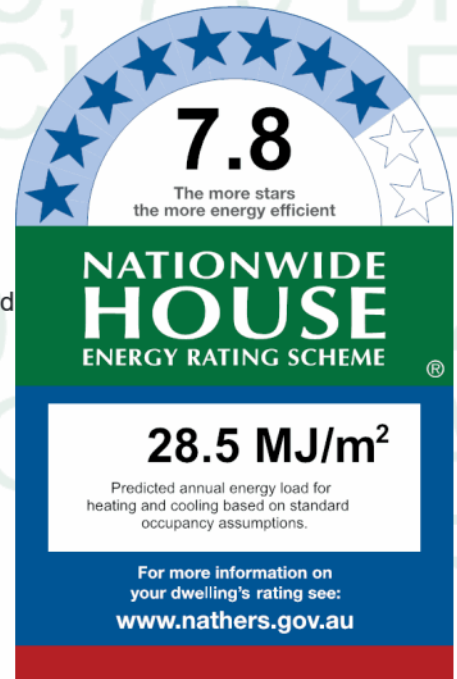
Name Dean Gorman
Business name Greenview Consulting Pty Ltd
Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
27.0	1.5
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	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*
Bedroom 1	ALM-003-01 A	n/a	1200	1000	n/a	90	W	Yes
Bedroom 1	ALM-003-01 A	n/a	1200	1000	n/a	90	W	Yes
Bath	ALM-003-01 A	n/a	1200	980	n/a	90	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	S	No
Bedroom 2	ALM-003-01 A	n/a	1200	980	n/a	90	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3345	S	100	NO
Bedroom 1	EW-1	2700	4200	W	200	NO
Bedroom 1	EW-1	2700	2500	N	200	NO
Bath	EW-1	2700	3190	S	200	YES
Kitchen/Living	EW-1	2700	1545	S	200	YES
Kitchen/Living	EW-1	2700	3045	S	3400	YES
Bedroom 2	EW-1	2700	3145	E	300	YES
Bedroom 2	EW-1	2700	4000	S	200	NO
Bedroom 2	EW-1	2700	3145	W	4300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		44.00	No insulation
IW-2 - Cavity brick, plasterboard		46.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering
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Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	14.00	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab on Ground 450mm	7.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	34.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	5.80	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 450mm	12.60	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

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

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	3	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

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

Explanatory notes

About this report

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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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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. 0008792939

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 6, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

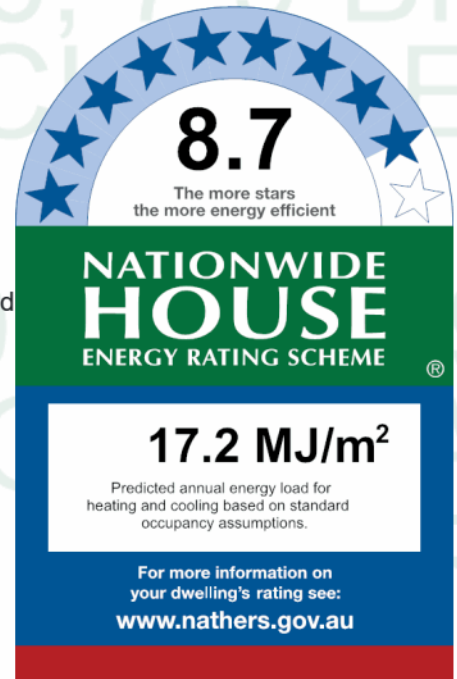
Name Dean Gorman
Business name Greenview Consulting Pty Ltd
Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
13.6	3.6
MJ/m²	MJ/m²

About the rating

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

Verification

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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.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	2400	2400	n/a	45	W	No
Bedroom 1	ALM-004-01 A	n/a	1200	980	n/a	22	N	No
Bath	ALM-004-01 A	n/a	1200	980	n/a	22	W	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No
Bedroom 2	ALM-004-01 A	n/a	1500	980	n/a	22	W	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

No Data Available

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	2000	E	4400	YES
Bedroom 1	EW-1	2700	3145	W	400	NO
Bedroom 1	EW-1	2700	4200	N	300	NO
Bath	EW-1	2700	600	S	7900	YES
Bath	EW-1	2700	3545	W	400	NO
Kitchen/Living	EW-1	2700	4045	N	3400	YES
Bedroom 2	EW-2	2700	3045	W	400	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
---------	-----------	------------------------	-----------------

IW-1 - Single Skin Brick	56.00	No insulation
IW-2 - Cavity brick, plasterboard	68.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath	Concrete Slab on Ground 450mm	7.90	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	31.90	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab on Ground 450mm	6.90	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab on Ground 450mm	6.30	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 450mm	10.80	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	No insulation	No
Bath	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Entry	Concrete, Plasterboard	No insulation	No
Hall	Concrete, Plasterboard	No insulation	No
Bedroom 2	Concrete, Plasterboard	No insulation	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	3	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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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

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 operability 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. 0008792897

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 7, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

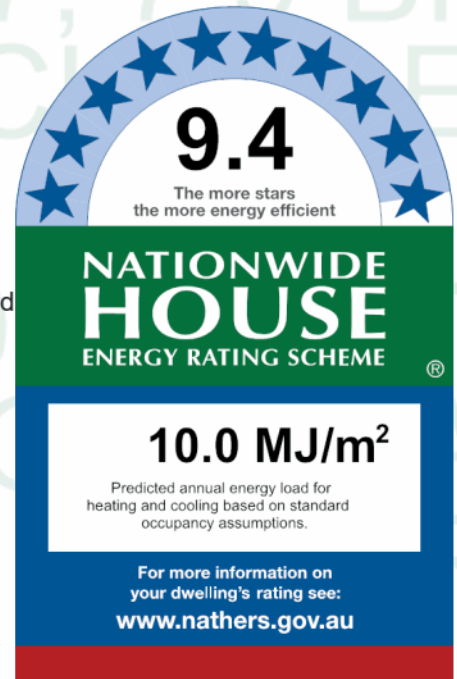
Name Dean Gorman
Business name Greenview Consulting Pty Ltd
Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
6.8	3.2
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

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
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Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

No Data Available

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4245	E	400	NO
Bedroom 1	EW-1	2700	1500	W	4000	YES
Bedroom 1	EW-1	2700	3300	N	200	NO
Bath	EW-1	2700	2390	E	400	NO
Kitchen/Living	EW-1	2700	900	W	200	NO
Kitchen/Living	EW-1	2700	3745	N	3400	YES
Entry	EW-1	2700	1745	E	400	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		37.00	No insulation
IW-2 - Cavity brick, plasterboard		30.00	No Insulation

Floor type

Location	Construction	Area Sub-floor ventilation (m ²)	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab on Ground 450mm	13.90 None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab on Ground 450mm	7.80 None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 450mm	26.60 None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	Concrete Slab on Ground 450mm	5.30	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

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

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

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

Explanatory notes

About this report

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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.
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. 0008792855

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 8, 7,9 Brighton St and 21 Charles St , Riverwood , NSW , 2210
Lot/DP 10, 14,15/1080361, 35818
NCC Class* 2
Type New Dwelling

Plans

Main plan 22009
Prepared by SARM Architects

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

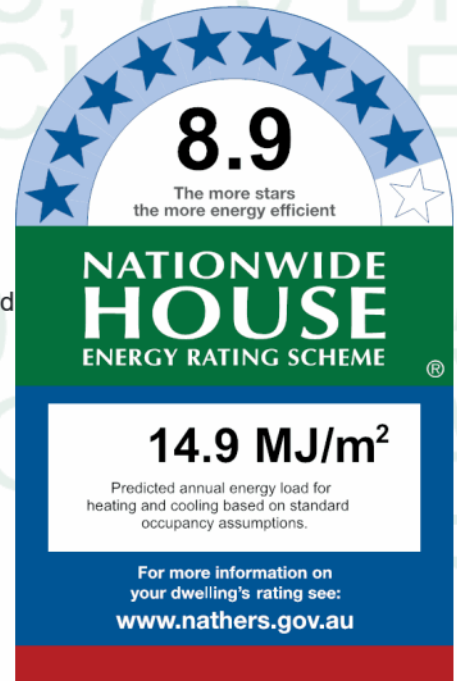
Name Dean Gorman
Business name Greenview Consulting Pty Ltd
Email dean@greenview.net.au
Phone 8544 1683
Accreditation No. DMN/13/1645
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
4.9	10.0
MJ/m²	MJ/m²

About the rating

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Verification

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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.

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
----------	-----------	------------	-------------	------------	-------------	-----------	-------------	------------------------

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	N	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	Yes

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3200	N	200	NO
Bedroom 1	EW-1	2700	1400	E	8300	YES
Bedroom 1	EW-1	2700	4245	W	300	NO
Bath	EW-1	2700	2290	W	300	NO
Kitchen/Living	EW-2	2700	3945	N	3500	YES
Kitchen/Living	EW-1	2700	1100	E	4300	NO
Kitchen/Living	EW-1	2700	645	W	300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		37.00	No insulation
IW-2 - Cavity brick, plasterboard		39.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering	
Bedroom 1	Concrete Slab, Unit Below 150mm	13.40	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab, Unit Below 150mm	7.20	None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation (R-value)	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 150mm	28.40	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	5.30	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
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Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	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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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

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 operability 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. 0008792848-01

Generated on 08 Nov 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 9, 7,9 Brighton St and 21 Charles St,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
7.3	9.2
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
Bedroom 1	ALM-004-01 A	n/a	1500	980	n/a	10	N	No
Bedroom 1	ALM-004-01 A	n/a	2400	2400	n/a	10	E	No
Bath	ALM-004-01 A	n/a	1200	970	n/a	22	E	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No
Bedroom 2	ALM-004-01 A	n/a	1500	970	n/a	10	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
-------------	----------------------

No Data Available

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4300	N	500	NO
Bedroom 1	EW-2	2700	3145	E	1400	NO
Bedroom 1	EW-1	2700	2000	W	4500	YES
Bath	EW-2	2700	3345	E	200	NO
Bath	EW-1	2700	800	S	3500	YES
Kitchen/Living	EW-2	2700	4045	N	3600	YES
Bedroom 2	EW-1	2700	3245	E	1000	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		56.00	No insulation
IW-2 - Cavity brick, plasterboard		67.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering	
Bedroom 1	Concrete Slab, Unit Below 150mm	13.50	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab, Unit Below 150mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	31.90	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	6.70	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab, Unit Below 150mm	5.90	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	11.20	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Hall	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	3	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	Medium

Explanatory notes

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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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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. 0008792947

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 10, 7,9 Brighton St and 21 Charles St ,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

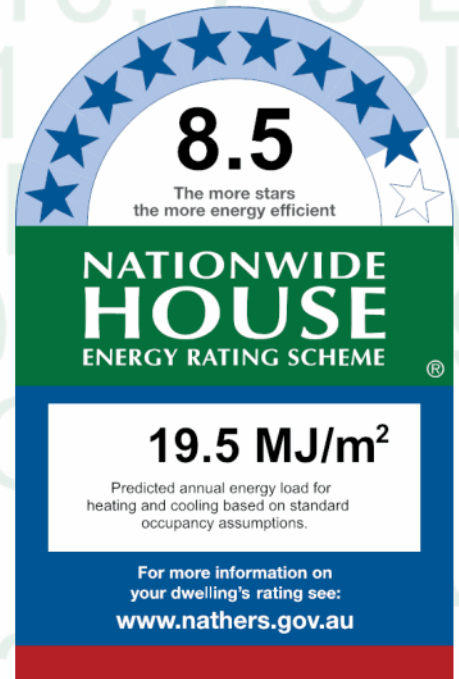
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
12.0	7.5
MJ/m ²	MJ/m ²

About the rating

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Verification

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Certificate check

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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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	E	No
Bath	ALM-004-01 A	n/a	2000	985	n/a	22	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	E	Yes
Bedroom 2	ALM-004-01 A	n/a	1500	985	n/a	22	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No
EW-2	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3000	N	4300	YES
Bedroom 1	EW-1	2700	3300	E	300	NO
Bedroom 1	EW-1	2700	4145	S	200	YES
Bath	EW-1	2700	700	E	200	YES
Bath	EW-1	2700	2300	S	300	NO
Bath	EW-2	2700	1100	S	300	NO
Bath	EW-2	2700	500	W	10900	YES
Kitchen/Living	EW-1	2700	4245	E	3300	YES
Bedroom 2	EW-1	2700	3145	S	400	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		53.00	No insulation
IW-2 - Cavity brick, plasterboard		67.00	No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering
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Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	13.60	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab, Unit Below 150mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	33.00	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab, Unit Below 150mm	6.60	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab, Unit Below 150mm	4.90	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	10.80	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Entry	Plasterboard	Bulk Insulation R3.5	No
Hall	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	2	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	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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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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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 operability 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. 0008792921

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 11, 7,9 Brighton St and 21 Charles St ,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

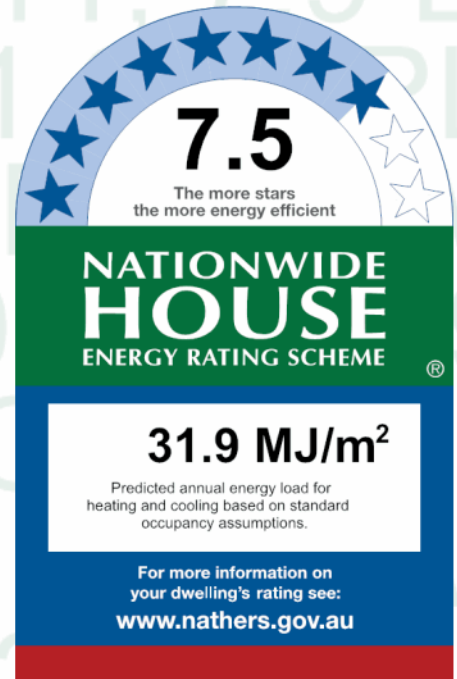
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
22.1	9.8
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	10	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
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Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

No Data Available

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	1300	E	4300	YES
Bedroom 1	EW-1	2700	3300	S	300	NO
Bedroom 1	EW-1	2700	4245	W	300	NO
Bath	EW-1	2700	2290	W	300	YES
Kitchen/Living	EW-2	2700	1100	E	300	NO
Kitchen/Living	EW-2	2700	3945	S	3800	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
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IW-1 - Single Skin Brick	37.00	No insulation
IW-2 - Cavity brick, plasterboard	41.00	No Insulation

Floor type

Location	Construction	Area Sub-floor ventilation (m ²)	Added insulation (R-value)	Covering	
Bedroom 1	Concrete Slab, Unit Below 150mm	13.80	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab, Unit Below 150mm	7.40	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	28.00	None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation (R-value)	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab, Unit Below 150mm	5.00	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	7	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	Medium

Explanatory notes

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Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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.
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. 0008792905

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 12, 7,9 Brighton St and 21 Charles St ,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 67.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 75.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

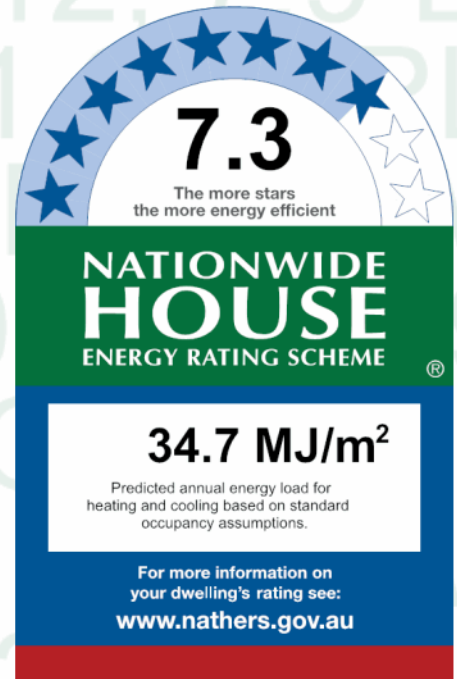
Declaration of interest Declaration completed: no conflicts

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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.



Thermal performance

Heating	Cooling
29.0	5.7
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	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*
Bedroom 1	ALM-003-01 A	n/a	1200	1000	n/a	90	W	Yes
Bedroom 1	ALM-003-01 A	n/a	1200	1000	n/a	90	W	Yes
Bath	ALM-003-01 A	n/a	1200	980	n/a	90	S	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	S	No
Bedroom 2	ALM-003-01 A	n/a	1200	980	n/a	90	S	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No
EW-2	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3345	S	100	NO
Bedroom 1	EW-1	2700	4200	W	600	NO
Bedroom 1	EW-1	2700	2500	N	200	NO
Bath	EW-2	2700	3190	S	200	YES
Kitchen/Living	EW-2	2700	1545	S	200	YES
Kitchen/Living	EW-1	2700	3045	S	3400	YES
Bedroom 2	EW-1	2700	3145	E	300	YES
Bedroom 2	EW-1	2700	4000	S	200	NO
Bedroom 2	EW-1	2700	3145	W	4300	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		44.00	No insulation
IW-2 - Cavity brick, plasterboard		46.00	No Insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added Insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	14.00	None	No Insulation	Ceramic Tiles 8mm
Bath	Concrete Slab, Unit Below 150mm	7.60	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	34.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	5.80	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	12.60	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Kitchen/Living	3	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	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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Glossary

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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.
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Opening percentage	the operability 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. 0008792871

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 13, 7,9 Brighton St and 21 Charles St ,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 69.0	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 77.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
15.7	5.6
MJ/m ²	MJ/m ²

About the rating

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Certificate check

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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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	2400	2400	n/a	45	W	Yes
Bedroom 1	ALM-004-01 A	n/a	1200	980	n/a	22	N	No
Bath	ALM-004-01 A	n/a	1200	980	n/a	22	W	Yes
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No
Bedroom 2	ALM-004-01 A	n/a	1500	980	n/a	22	W	Yes

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
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No Data Available

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	2000	E	4400	YES
Bedroom 1	EW-1	2700	3145	W	400	NO
Bedroom 1	EW-1	2700	4200	N	300	NO
Bath	EW-1	2700	600	S	7900	YES
Bath	EW-1	2700	3545	W	400	NO
Kitchen/Living	EW-2	2700	4045	N	3400	YES
Bedroom 2	EW-2	2700	3045	W	400	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
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IW-1 - Single Skin Brick

56.00

No insulation

IW-2 - Cavity brick, plasterboard

68.00

No Insulation

Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering	
Bedroom 1	Concrete Slab, Unit Below 150mm	13.10	None	No Insulation	Carpet+Rubber Underlay 18mm

Location	Construction	Area (m ²)	Sub-floor ventilation (R-value)	Added insulation (R-value)	Covering
Bath	Concrete Slab, Unit Below 150mm	7.90	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	31.90	None	No Insulation	Ceramic Tiles 8mm
Entry	Concrete Slab, Unit Below 150mm	6.90	None	No Insulation	Ceramic Tiles 8mm
Hall	Concrete Slab, Unit Below 150mm	6.30	None	No Insulation	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	10.80	None	No Insulation	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Entry	Plasterboard	Bulk Insulation R3.5	No
Hall	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	13	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	3	Downlights - LED	150	Sealed
Hall	2	Downlights - LED	150	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200
Bedroom 2	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	Medium

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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. 0008792830

Generated on 25 Jul 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit 14, 7,9 Brighton St and 21 Charles St ,
Riverwood , NSW , 2210

Lot/DP 10, 14,15/1080361, 35818

NCC Class* 2

Type New Dwelling

Plans

Main plan 22009

Prepared by SARM Architects

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned* 54.0	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 54.0	56
Garage 0.0	



Accredited assessor

Name Dean Gorman

Business name Greenview Consulting Pty Ltd

Email dean@greenview.net.au

Phone 8544 1683

Accreditation No. DMN/13/1645

Assessor Accrediting Organisation Design Matters National

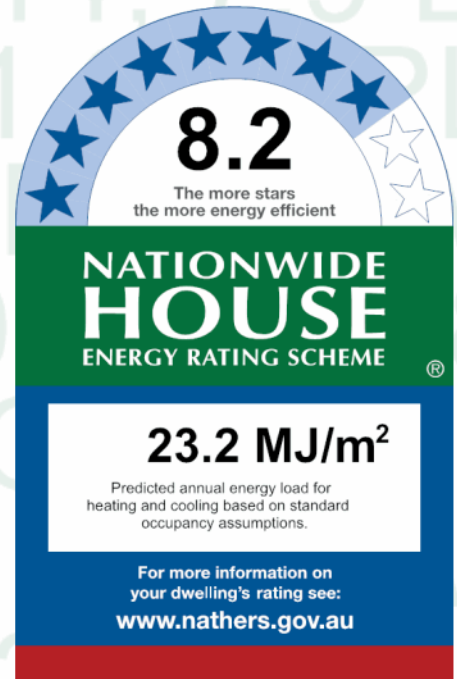
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

Heating	Cooling
14.2	9.0
MJ/m ²	MJ/m ²

About the rating

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

Verification

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



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-004-01 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*
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Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	ALM-004-01 A	n/a	1500	2400	n/a	45	N	No
Kitchen/Living	ALM-004-01 A	n/a	2400	2400	n/a	45	N	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

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

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4245	E	400	NO
Bedroom 1	EW-1	2700	1500	W	4000	YES
Bedroom 1	EW-1	2700	3300	N	300	NO
Bath	EW-1	2700	2390	E	400	NO
Kitchen/Living	EW-1	2700	900	W	200	NO
Kitchen/Living	EW-1	2700	3745	N	3700	YES
Entry	EW-1	2700	1745	E	400	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Single Skin Brick		37.00	No insulation
IW-2 - Cavity brick, plasterboard		30.00	No Insulation

Floor type

Location	Construction	Area Sub-floor ventilation (m ²)	Added insulation (R-value)	Covering	
Bedroom 1	Concrete Slab, Unit Below 150mm	13.90	None	No Insulation	Carpet+Rubber Underlay 18mm
Bath	Concrete Slab, Unit Below 150mm	7.80	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab, Unit Below 150mm	26.60	None	No Insulation	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation (R-value)	Added insulation (R-value)	Covering
Entry	Concrete Slab, Unit Below 150mm	5.30	None	No Insulation	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Entry	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights - LED	150	Sealed
Bath	3	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Kitchen/Living	11	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Entry	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 1	1	1200
Kitchen/Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.3	0.50	Medium

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the operability 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).