Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0008635110

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address 25-29 Prospero St ,
Maryland , NSW , 2287

Lot/DP 395-397/702896

NatHERS climate zone 15

Accredited assessor

Amir Girgis

Northrop Consulting Engineers

agirgis@northrop.com.au

02 9241 4188

Accreditation No. 20579

Assessor Accrediting Organisation ABSA

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ppubwFgMC . 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
0008635021-01	1	20.6	32	52.5	6.8
0008635054-01	2	24.3	18.2	42.5	7.4
0008635088-01	3	15.9	23.1	38.9	7.7
0008635039-01	4	20.8	24.9	45.7	7.3
0008635070-01	5	31.3	27.4	58.7	6.4

Continued Over

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.

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
0008635096-01	6	14.4	21.9	36.3	7.9
0008635047-01	7	39.4	21.1	60.5	6.4
0008635062-02	8	31.9	22.2	54.1	6.7
0008635104-01	9	28.5	23.5	52	6.9

Explanatory notes

About this report

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

Accredited Assessors

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

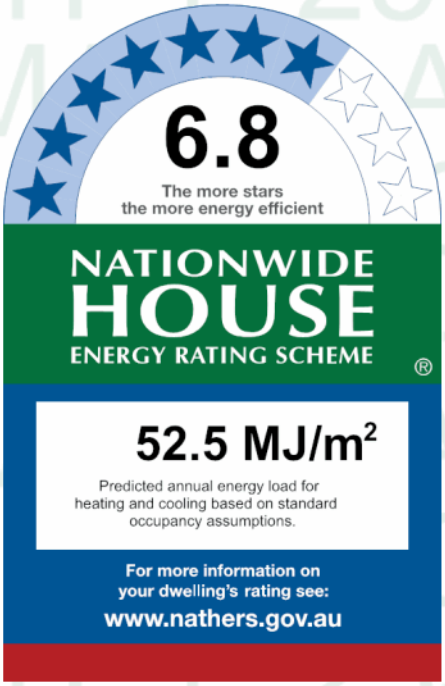
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

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

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635021-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 1, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m²)*	
Conditioned*	78.0
Unconditioned*	7.0
Total	85.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
20.6	**32.0**
MJ/m²	MJ/m²

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=pbbliCJEa.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
ALM-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2400	2700	n/a	66	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	300	n/a	00	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	850	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	2400	650	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	2400	650	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	1200	850	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	45	N	No
Bedroom 2	ALM-005-01 A	n/a	2100	850	n/a	10	N	No
Bedroom 2	ALM-005-01 A	n/a	2100	850	n/a	10	N	No
Bathroom	ALM-005-01 A	n/a	2100	600	n/a	10	N	No
Bedroom 1	ALM-005-01 A	n/a	2100	850	n/a	10	E	No
Bedroom 1	ALM-005-01 A	n/a	2100	1200	n/a	10	N	No
Bedroom 1	ALM-006-03 A	n/a	1200	1200	n/a	00	E	No
Bedroom 1	ALM-005-01 A	n/a	1200	600	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
Kitchen/Living	2400	900	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R3	No
EW-3	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	3595	E	1700	NO
Kitchen/Living	EW-1	2700	2800	W	2500	YES
Kitchen/Living	EW-1	2700	1100	S	2800	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	2500	W	1400	NO
Kitchen/Living	EW-2	2700	4300	N	0	NO
Kitchen/Living	EW-2	2700	500	E	0	YES
Kitchen/Living	EW-1	2700	4300	N	0	YES
Bedroom 2	EW-3	2700	900	S	0	NO
Bedroom 2	EW-3	2700	4000	W	0	NO
Bedroom 2	EW-3	2700	3195	N	0	YES
Bathroom	EW-1	2700	800	W	0	YES
Bathroom	EW-3	2700	2995	N	0	NO
Bedroom 1	EW-3	2700	700	S	2700	YES
Bedroom 1	EW-3	2700	2700	E	700	YES
Bedroom 1	EW-3	2700	4895	N	0	NO
Bedroom 1	EW-3	2700	2100	E	0	NO
WC	EW-1	2700	1195	E	1700	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		57.00	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
Kitchen/Living	Concrete Slab on Ground 100mm	36.70	None	No Insulation	40/60 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	4.10		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	8.60	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	6.90		No Insulation	Ceramic Tiles 8mm
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	4.80		No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.20		No Insulation	Carpet 10mm
Bedroom 1/WC	Timber Above Plasterboard 100mm	3.20		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	3.30	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
WC	Concrete Slab on Ground 19mm	3.30	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	4.00		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	18	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	6	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Corridor	5	Downlights - LED	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
WC	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
WC	1	Exhaust Fans	300	Sealed
Stairs	2	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	No Insulation, Only an Air Gap	0.30	Light

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

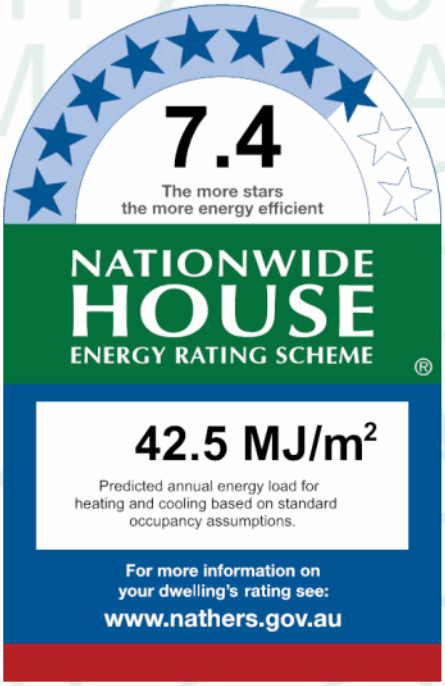
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635054-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 2, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	85.0
Unconditioned*	0.0
Total	85.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
24.3	**18.2**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=mOmYgohcP.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-005-01 A	n/a	2400	2700	n/a	66	E	No
Kitchen/Living	ALM-005-01 A	n/a	1200	750	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	750	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	2100	300	n/a	00	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	850	n/a	90	W	No
Bedroom 2	ALM-005-01 A	n/a	2100	850	n/a	10	E	No
Bedroom 2	ALM-006-03 A	n/a	1200	1200	n/a	00	E	No
Bedroom 2	ALM-005-01 A	n/a	1200	600	n/a	10	E	No
Bedroom 1	ALM-006-03 A	n/a	2400	2700	n/a	66	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	

* Refer to glossary.

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	900	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-3	Brick Veneer	0.85	Dark	Bulk Insulation R2.7	No
EW-4	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	3695	E	1700	NO
Kitchen/Living	EW-2	2700	2000	W	800	NO
Kitchen/Living	EW-2	2700	1100	N	2900	YES
Kitchen/Living	EW-3	2700	2900	W	1900	YES
Bedroom 2	EW-4	2700	3200	E	700	YES
Bedroom 2	EW-4	2700	700	N	3200	YES
Bedroom 2	EW-4	2700	1700	E	0	NO
Bedroom 1	EW-4	2700	900	W	0	NO
Bedroom 1	EW-4	2700	800	N	4000	YES
Bedroom 1	EW-4	2700	4000	W	800	YES
Laundry	EW-1	2700	1195	E	1700	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		96.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		56.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	35.30	None	No Insulation	40/60 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	8.00		No Insulation	Carpet 10mm
Bedroom 2/Laundry	Timber Above Plasterboard 19mm	2.60		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	6.00	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Corridor/Kitchen/Living	Timber Above Plasterboard 100mm	3.20		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.10		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	3.90	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bath/Kitchen/Living	Timber Above Plasterboard 100mm	7.10		No Insulation	Ceramic Tiles 8mm
Laundry	Concrete Slab on Ground 19mm	3.30	None	No Insulation	Carpet 10mm
Stairwell/Kitchen/Living	Timber Above Plasterboard 100mm	3.70		No Insulation	Carpet 10mm
Stairwell/Laundry	Timber Above Plasterboard 100mm	0.80		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Laundry	Timber Above Plasterboard	No Insulation	No
Stairwell	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	18	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	6	Downlights - LED	150	Sealed
Corridor	2	Downlights - LED	150	Sealed
Bedroom 1	6	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Laundry	1	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Stairwell	1	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

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

* Refer to glossary.

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

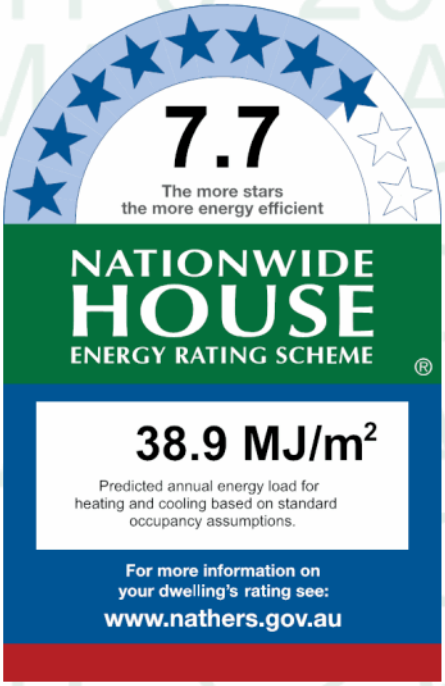
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635088-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 3, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	81.0
Unconditioned*	0.0
Total	81.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
15.9	**23.1**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=ktfMXWcvW.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
ALM-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2400	2700	n/a	66	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	300	n/a	00	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	W	No
Bedroom 2	ALM-006-03 A	n/a	2400	2700	n/a	66	W	No
Bedroom 1	ALM-005-01 A	n/a	2100	1000	n/a	10	E	No
Bedroom 1	ALM-005-01 A	n/a	2100	1000	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*

* Refer to glossary.

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2700	820	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No
EW-3	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	3795	E	0	NO
Kitchen/Living	EW-1	2700	2900	W	2200	YES
Kitchen/Living	EW-1	2700	1100	S	2900	YES
Kitchen/Living	EW-1	2700	2000	W	1100	NO
Bedroom 2	EW-1	2700	2095	S	0	NO
Bedroom 2	EW-2	2700	3900	W	1100	YES
Bedroom 2	EW-2	2700	1100	S	3900	YES
Bedroom 2	EW-2	2700	1000	W	0	NO
Bedroom 1	EW-1	2700	2995	S	0	NO
Bedroom 1	EW-3	2700	4900	E	0	NO
WC	EW-1	2700	1095	E	0	NO
Stairs Void	EW-1	2700	3990	S	0	NO

Internal wall *type*

* Refer to glossary.

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		57.00	No insulation
IW-2 - Cavity brick, plasterboard		72.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	36.00	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.30		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	4.20	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	7.40		No Insulation	Ceramic Tiles 8mm
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	3.60		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	9.70		No Insulation	Carpet 10mm
Bedroom 1/WC	Timber Above Plasterboard 100mm	2.80		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	1.90	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
WC	Concrete Slab on Ground 19mm	3.10	None	No Insulation	Ceramic Tiles 8mm
Stairs Void/Kitchen/Living	Timber Above Plasterboard 100mm	3.70		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Timber Above Plasterboard	No Insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs Void	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	17	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	6	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Corridor	2	Downlights - LED	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Stairs Void	2	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

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

* Refer to glossary.

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

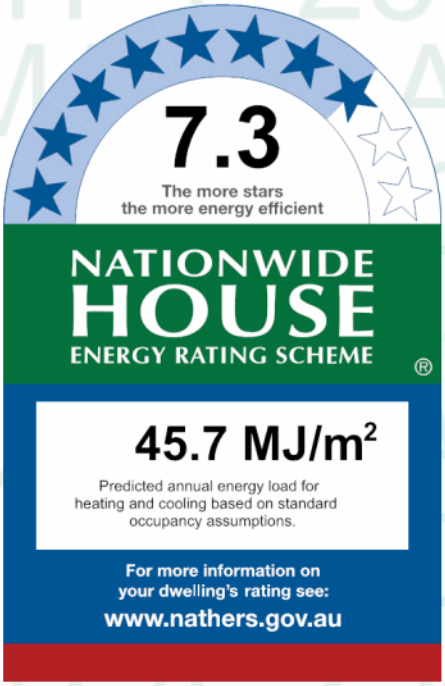
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635039-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 4, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	42.0
Unconditioned*	8.0
Total	49.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
20.8	**24.9**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=nitlpGmKI.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
ALM-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2400	2100	n/a	50	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	300	n/a	00	W	No
Kitchen/Living	ALM-005-01 A	n/a	1600	600	n/a	90	W	No
Kitchen/Living	ALM-006-03 A	n/a	1600	1100	n/a	00	W	No
WC	ALM-005-01 A	n/a	2100	600	n/a	90	S	No
Bedroom 1	ALM-005-01 A	n/a	1600	600	n/a	90	E	No
Bedroom 1	ALM-005-01 A	n/a	1600	1100	n/a	00	E	No
Bedroom 1	ALM-005-01 A	n/a	2100	700	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
Kitchen/Living	2040	900	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	3095	E	0	NO
Kitchen/Living	EW-2	2700	3995	W	900	NO
WC	EW-1	2700	3695	S	0	NO
WC	EW-1	2700	2095	W	900	NO
Bedroom 1	EW-1	2700	2995	E	0	NO
Bedroom 1	EW-1	2700	4495	S	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		22.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		30.00	No insulation

Floor *type*

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	29.20	None	No Insulation	60/40 Carpet 10mm/Ceramic
WC	Concrete Slab on Ground 100mm	7.50	None	No Insulation	Ceramic Tiles 8mm
Bedroom 1	Concrete Slab on Ground 100mm	12.30	None	No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	10	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
WC	2	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Bedroom 1	4	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade

* Refer to glossary.

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

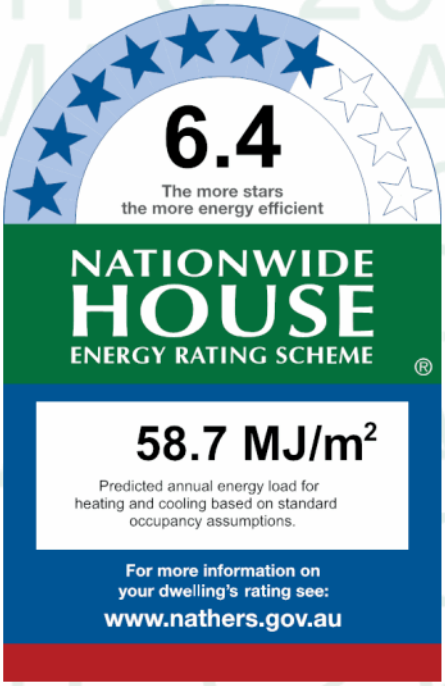
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635070-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 5, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	82.0
Unconditioned*	8.0
Total	90.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
31.3	**27.4**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=OMqaLJmeU.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-005-01 A	n/a	2100	900	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	2100	900	n/a	45	N	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	E	No
Kitchen/Living	ALM-005-01 A	n/a	1200	725	n/a	90	E	No
Kitchen/Living	ALM-006-03 A	n/a	2100	520	n/a	00	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	3200	n/a	66	W	No
Bedroom 2	ALM-005-01 A	n/a	2100	1000	n/a	10	N	No
Bedroom 2	ALM-005-01 A	n/a	2100	1000	n/a	10	N	No
Bathroom	ALM-005-01 A	n/a	1200	600	n/a	10	E	No
Corridor	ALM-005-01 A	n/a	2100	1000	n/a	10	W	No
Bedroom 1	ALM-006-03 A	n/a	1200	1200	n/a	00	W	No
Bedroom 1	ALM-005-01 A	n/a	1200	600	n/a	90	W	No
Bedroom 1	ALM-005-01 A	n/a	1200	850	n/a	10	N	No
Bedroom 1	ALM-005-01 A	n/a	1200	850	n/a	10	N	No
WC	ALM-005-01 A	n/a	600	600	n/a	90	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								

* Refer to glossary.

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
Kitchen/Living	2100	900	90	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-3	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	5100	N	0	YES
Kitchen/Living	EW-1	2700	300	W	0	YES
Kitchen/Living	EW-1	2700	3500	N	0	NO
Kitchen/Living	EW-2	2700	3400	E	1200	NO
Kitchen/Living	EW-1	2700	1100	S	2200	YES
Kitchen/Living	EW-1	2700	2200	E	2300	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	4095	W	1000	NO
Bedroom 2	EW-3	2700	4095	N	1100	YES
Bedroom 2	EW-3	2700	4500	E	0	NO
Bedroom 2	EW-3	2700	800	S	0	NO
Bathroom	EW-2	2700	1795	N	0	NO
Bathroom	EW-3	2700	800	E	4100	YES
Corridor	EW-3	2700	2195	W	800	NO
Bedroom 1	EW-3	2700	2200	W	0	NO
Bedroom 1	EW-2	2700	600	N	0	NO
Bedroom 1	EW-3	2700	2600	N	0	NO
Bedroom 1	EW-2	2700	1395	N	0	NO
Bedroom 1	EW-3	2700	895	W	800	YES
Bedroom 1	EW-3	2700	800	S	3100	YES
WC	EW-1	2700	1195	W	1000	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		44.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		65.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	39.40	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	11.00		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	7.30	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	5.30		No Insulation	Ceramic Tiles 8mm
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	5.30		No Insulation	Carpet 10mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Corridor /WC	Timber Above Plasterboard 100mm	2.50		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	11.50		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	1.70	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Laundry	Concrete Slab on Ground 19mm	1.50	None	No Insulation	Ceramic Tiles 8mm
WC	Concrete Slab on Ground 100mm	2.70	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	2.00		No Insulation	Carpet 10mm
Stairs/Laundry	Timber Above Plasterboard 100mm	1.60		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Foil reflective both sides of the Bulk Insulation R3	Yes
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Laundry	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Laundry	Timber Above Plasterboard	No Insulation	No
WC	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	18	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bedroom 2	6	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Corridor	5	Downlights - LED	150	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
Laundry	1	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Stairs	2	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

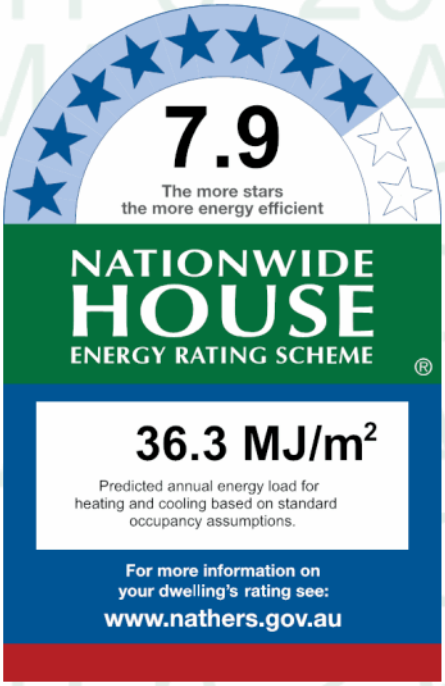
Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635096-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 6, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	395-397/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	86.0
Unconditioned*	2.0
Total	88.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
14.4	**21.9**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, referer to Additional Notes on page 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=kcZAeXQdM.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-005-01 A	n/a	1200	750	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	750	n/a	90	W	No
Kitchen/Living	ALM-006-03 A	n/a	2400	3200	n/a	66	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	400	n/a	00	W	No
Bedroom 2	ALM-006-03 A	n/a	1200	1200	n/a	00	E	No
Bedroom 2	ALM-005-01 A	n/a	1200	600	n/a	10	E	No
Corridor	ALM-005-01 A	n/a	2100	1000	n/a	10	E	No
Bedroom 1	ALM-006-03 A	n/a	2400	2700	n/a	66	W	No
WC	ALM-005-01 A	n/a	600	600	n/a	90	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	

* Refer to glossary.

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	1000	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	1100	S	2200	YES
Kitchen/Living	EW-1	2700	3000	W	1200	NO
Kitchen/Living	EW-1	2700	4095	E	1000	NO
Kitchen/Living	EW-1	2700	2200	W	2300	YES
Bedroom 2	EW-2	2700	1800	E	0	NO
Bedroom 2	EW-2	2700	1000	S	3400	YES
Bedroom 2	EW-2	2700	1195	E	1000	YES
Corridor	EW-2	2700	2195	E	1000	NO
Bedroom 1	EW-2	2700	900	S	4300	YES
Bedroom 1	EW-2	2700	900	W	0	NO
Bedroom 1	EW-2	2700	4300	W	900	YES
WC	EW-1	2700	1095	E	1000	NO

* Refer to glossary.

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		96.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		67.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	38.20	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	10.50		No Insulation	Carpet 10mm
Bedroom 2	Suspended Timber Floor 19mm	1.80	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Corridor/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		No Insulation	Carpet 10mm
Corridor/WC	Timber Above Plasterboard 100mm	2.30		No Insulation	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		No Insulation	Ceramic Tiles 8mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	13.00		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	3.20	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Laundry	Concrete Slab on Ground 100mm	1.60	None	No Insulation	Ceramic Tiles 8mm
WC	Concrete Slab on Ground 100mm	2.50	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	1.70		No Insulation	Carpet 10mm
Stairs/Laundry	Timber Above Plasterboard 100mm	1.60		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Laundry	Timber Above Plasterboard	No Insulation	No
WC	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	18	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Corridor	2	Downlights - LED	150	Sealed
Bathroom	5	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Bedroom 1	5	Downlights - LED	150	Sealed
Laundry	1	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Stairs	1	Downlights - LED	150	Sealed

Ceiling *fans*

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

Roof *type*

* Refer to glossary.

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

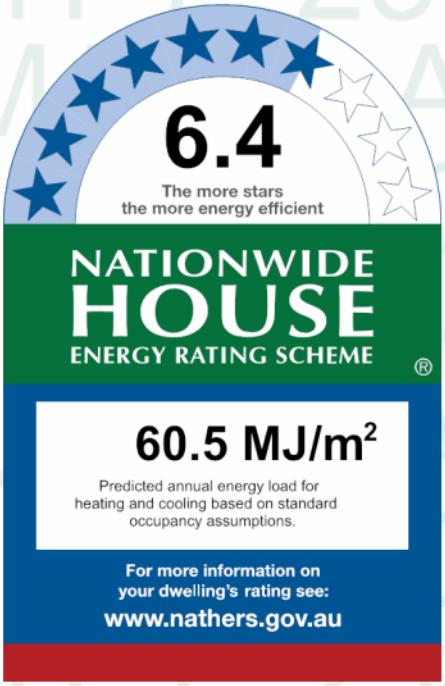
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635047-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 7, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	25-29/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	91.0
Unconditioned*	8.0
Total	99.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
39.4	**21.1**
MJ/m^2	MJ/m^2

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, refer to Additional Notes on page 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=WACUgsdVY.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-005-01 A	n/a	2100	520	n/a	00	E	No
Kitchen/Living	ALM-005-01 A	n/a	1200	700	n/a	90	E	No
Kitchen/Living	ALM-005-01 A	n/a	1200	700	n/a	90	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	1570	n/a	50	S	No
Kitchen/Living	ALM-006-03 A	n/a	2400	2700	n/a	66	W	No
Bedroom 2	ALM-005-01 A	n/a	2100	1100	n/a	10	S	No
Bedroom 2	ALM-005-01 A	n/a	600	1050	n/a	10	W	No
Bedroom 2	ALM-005-01 A	n/a	600	1050	n/a	10	W	No
Bathroom	ALM-005-01 A	n/a	2100	600	n/a	10	S	No
WC	ALM-005-01 A	n/a	600	600	n/a	90	W	No
Bedroom 1	ALM-006-03 A	n/a	2400	2700	n/a	66	E	No
Bedroom 3	ALM-005-01 A	n/a	2100	850	n/a	10	S	No
Bedroom 3	ALM-005-01 A	n/a	2100	1100	n/a	10	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*

* Refer to glossary.

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
Kitchen/Living	2100	820	90	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	2200	E	2200	YES
Kitchen/Living	EW-1	2700	1000	N	2200	YES
Kitchen/Living	EW-1	2700	3000	E	1200	NO
Kitchen/Living	EW-1	2700	5700	S	0	YES
Kitchen/Living	EW-1	2700	400	E	0	YES
Kitchen/Living	EW-1	2700	3000	S	0	NO
Kitchen/Living	EW-1	2700	4495	W	3300	NO
Bedroom 2	EW-2	2700	3295	S	0	YES
Bedroom 2	EW-1	2700	3800	W	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	EW-1	2700	2400	N	0	NO
Bathroom	EW-2	2700	2090	S	0	NO
WC	EW-1	2700	1095	W	3300	NO
Bedroom 1	EW-2	2700	1000	N	4300	YES
Bedroom 1	EW-2	2700	900	E	0	NO
Bedroom 1	EW-2	2700	3895	S	0	NO
Bedroom 1	EW-2	2700	4300	E	1000	YES
Bedroom 3	EW-2	2700	695	S	0	YES
Bedroom 3	EW-1	2700	400	E	0	YES
Bedroom 3	EW-1	2700	3000	S	0	NO
Bedroom 3	EW-2	2700	1800	W	1000	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		78.00	No insulation
IW-2 - Cavity brick, plasterboard		47.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	39.70	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2	Suspended Timber Floor 19mm	12.40	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	5.90		No Insulation	Ceramic Tiles 8mm
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	5.80		No Insulation	Carpet 10mm
Corridor /WC	Timber Above Plasterboard 100mm	1.10		No Insulation	Carpet 10mm
WC	Concrete Slab on Ground 100mm	2.50	None	No Insulation	Ceramic Tiles 8mm
Br	Concrete Slab on Ground 100mm	1.50	None	No Insulation	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	2.00		No Insulation	Carpet 10mm
Stairs/WC	Timber Above Plasterboard 100mm	1.30		No Insulation	Carpet 10mm
Stairs/Br	Timber Above Plasterboard 100mm	1.50		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	12.70		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	3.10	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	11.90		No Insulation	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Timber Above Plasterboard	No Insulation	No
Br	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 3	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	17	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Corridor	2	Downlights - LED	150	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Br	1	Downlights - LED	150	Sealed
Br	1	Exhaust Fans	300	Sealed
Stairs	2	Downlights - LED	150	Sealed
Bedroom 1	6	Downlights - LED	150	Sealed
Bedroom 3	5	Downlights - LED	450	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200
Bedroom 2	1	1200
Bedroom 1	1	1200
Bedroom 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	No Insulation, Only an Air Gap	0.85	Dark

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

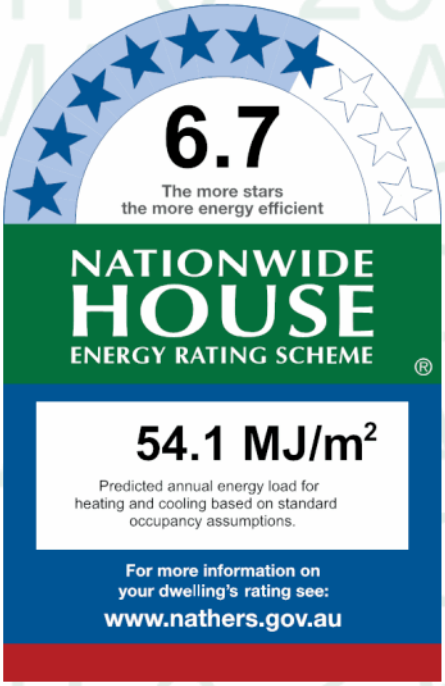
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635062-02

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 8, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	25-29/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	92.0
Unconditioned*	4.0
Total	96.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

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

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, refer to Additional Notes on page 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=DONkFIxzs.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
ALM-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53

Custom* windows

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

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2400	3200	n/a	66	S	No
Kitchen/Living	ALM-005-01 A	n/a	1540	2400	n/a	90	W	No
Kitchen/Living	ALM-005-01 A	n/a	1200	1400	n/a	10	N	No
Kitchen/Living	ALM-006-03 A	n/a	2400	550	n/a	00	N	No
Bedroom 2	ALM-005-01 A	n/a	2100	1000	n/a	10	S	No
Bedroom 2	ALM-005-01 A	n/a	2100	880	n/a	10	W	No
Bathroom	ALM-005-01 A	n/a	2100	610	n/a	05	W	No
Bedroom 1	ALM-005-01 A	n/a	2100	610	n/a	05	N	No
Bedroom 1	ALM-005-01 A	n/a	2100	610	n/a	05	N	No
Bedroom 3	ALM-005-01 A	n/a	1200	1800	n/a	10	S	No
Bedroom 3	ALM-005-01 A	n/a	600	1800	n/a	10	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

* Refer to glossary.

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
Kitchen/Living	2100	900	90	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	4295	S	3400	NO
Kitchen/Living	EW-1	2700	8500	W	0	NO
Kitchen/Living	EW-1	2700	3100	N	0	NO
Kitchen/Living	EW-1	2700	1200	E	2300	YES
Kitchen/Living	EW-1	2700	2300	N	2600	YES
Bedroom 2	EW-2	2700	1700	S	0	YES
Bedroom 2	EW-2	2700	3595	W	700	NO
Bathroom	EW-2	2700	1490	W	700	NO
Laundry	EW-1	2700	1095	S	3400	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	600	N	0	NO
Bedroom 1	EW-2	2700	2100	N	0	NO
Bedroom 1	EW-1	2700	2700	N	0	NO
Bedroom 1	EW-2	2700	3395	W	700	NO
Bedroom 3	EW-2	2700	3700	S	0	NO
Bedroom 3	EW-2	2700	3095	W	0	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		51.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		65.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	40.50	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 150mm	10.80		No Insulation	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	4.30		No Insulation	Ceramic Tiles 8mm
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	5.60		No Insulation	Carpet 10mm
Corridor /Laundry	Timber Above Plasterboard 100mm	1.50		No Insulation	Carpet 10mm
Laundry	Concrete Slab on Ground 100mm	2.40	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	2.90		No Insulation	Carpet 10mm
Stairs/Laundry	Timber Above Plasterboard 100mm	0.80		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	15.40		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	2.70	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bedroom 3	Suspended Timber Floor 19mm	11.30	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Laundry	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 3	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	16	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Corridor	2	Downlights - LED	150	Sealed
Laundry	1	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Stairs	2	Downlights - LED	150	Sealed
Bedroom 1	6	Downlights - LED	150	Sealed
Bedroom 3	2	Downlights - LED	450	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

* Refer to glossary.

Location	Quantity	Diameter (mm)
Bedroom 2	1	1200
Bedroom 1	1	1200
Bedroom 3	1	1200

Roof *type*

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

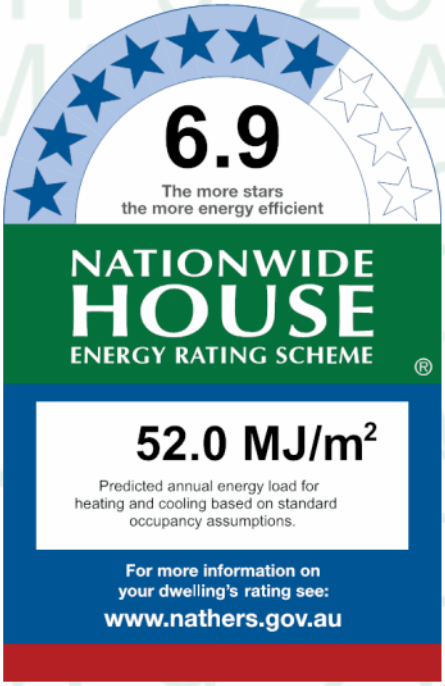
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008635104-01

Generated on 10 May 2023 using BERS Pro v4.4.1.5d (3.21)



Property

Address	Unit 9, 25-29 Prospero St , Maryland , NSW , 2287
Lot/DP	25-29/702896
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	10.05.2023
Prepared by	Stanton Dahl Architects

Construction and environment

Assessed floor area (m²)*	
Conditioned*	102.0
Unconditioned*	5.0
Total	107.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
15

Thermal performance

Heating	Cooling
28.5	**23.5**
MJ/m²	MJ/m²

Accredited assessor

Name	Amir Girgis
Business name	Northrop Consulting Engineers
Email	agirgis@northrop.com.au
Phone	02 9241 4188
Accreditation No.	20579
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declared, refer to Additional Notes on page 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=nxGOnQPEN.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Northrop is engaged for building services design.
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-005-01 A	ALM-005-01 A Aluminium A DG Argon Fill Clear-Clear	4.5	0.50	0.48	0.53
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-005-01 A	n/a	2400	650	n/a	00	N	No
Kitchen/Living	ALM-005-01 A	n/a	900	1200	n/a	90	N	No
Kitchen/Living	ALM-005-01 A	n/a	1200	1200	n/a	90	E	No
Kitchen/Living	ALM-005-01 A	n/a	1200	1200	n/a	90	E	No
Kitchen/Living	ALM-006-03 A	n/a	2400	3200	n/a	66	S	No
Bedroom 2	ALM-005-01 A	n/a	2100	850	n/a	10	E	No
Bedroom 2	ALM-005-01 A	n/a	2100	1000	n/a	10	S	No
Bathroom	ALM-005-01 A	n/a	2100	600	n/a	10	E	No
Bedroom 1	ALM-005-01 A	n/a	1500	600	n/a	10	E	No
Bedroom 1	ALM-005-01 A	n/a	1500	1200	n/a	00	E	No
Bedroom 1	ALM-005-01 A	n/a	2100	850	n/a	10	N	No
Bedroom 3	ALM-005-01 A	n/a	600	900	n/a	10	E	No
Bedroom 3	ALM-005-01 A	n/a	600	900	n/a	10	E	No
Bedroom 3	ALM-005-01 A	n/a	1200	730	n/a	10	S	No
Bedroom 3	ALM-005-01 A	n/a	2100	730	n/a	10	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								

* Refer to glossary.

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
Kitchen/Living	2100	900	90	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2.7	No
EW-2	Metal Clad Cavity Panel Direct Fix	0.85	Dark	Bulk Insulation R3	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	2400	N	3100	YES
Kitchen/Living	EW-1	2700	1200	W	2400	YES
Kitchen/Living	EW-2	2700	1700	N	0	YES
Kitchen/Living	EW-1	2700	300	W	1000	YES
Kitchen/Living	EW-1	2700	1900	N	0	NO
Kitchen/Living	EW-1	2700	8600	E	0	NO
Kitchen/Living	EW-1	2700	4695	S	3400	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	EW-2	2700	3695	E	600	NO
Bedroom 2	EW-2	2700	1800	S	0	YES
Bathroom	EW-2	2700	1490	E	600	NO
WC	EW-1	2700	1295	S	3400	NO
Bedroom 1	EW-2	2700	400	N	0	YES
Bedroom 1	EW-2	2700	1800	E	0	NO
Bedroom 1	EW-2	2700	400	S	6000	YES
Bedroom 1	EW-2	2700	795	E	600	YES
Bedroom 1	EW-1	2700	2200	N	0	NO
Bedroom 1	EW-2	2700	300	E	3800	YES
Bedroom 1	EW-2	2700	1900	N	300	YES
Bedroom 1	EW-2	2700	300	W	4100	YES
Bedroom 1	EW-1	2700	1900	N	0	NO
Bedroom 1	EW-2	2700	800	E	0	YES
Bedroom 3	EW-2	2700	2995	E	0	YES
Bedroom 3	EW-1	2700	4200	S	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		71.00	No insulation
IW-2 - Cavity brick, plasterboard		50.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Concrete Slab on Ground 100mm	44.30	None	No Insulation	60/40 Carpet 10mm/Ceramic
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 150mm	12.90		No Insulation	Carpet 10mm
Bathroom/Kitchen/Living	Timber Above Plasterboard 100mm	5.00		No Insulation	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Corridor /Kitchen/Living	Timber Above Plasterboard 100mm	5.20		No Insulation	Carpet 10mm
Corridor /WC	Timber Above Plasterboard 100mm	1.50		No Insulation	Carpet 10mm
WC	Concrete Slab on Ground 100mm	2.80	None	No Insulation	Ceramic Tiles 8mm
Stairs/Kitchen/Living	Timber Above Plasterboard 100mm	3.60		No Insulation	Carpet 10mm
Stairs/WC	Timber Above Plasterboard 100mm	1.20		No Insulation	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 100mm	16.10		No Insulation	Carpet 10mm
Bedroom 1	Suspended Timber Floor 100mm	4.20	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm
Bedroom 3	Suspended Timber Floor 19mm	12.40	Open	Bulk Insulation in Contact with Floor R2.5	Carpet 10mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bathroom	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Corridor	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
WC	Timber Above Plasterboard	No Insulation	No
Stairs	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 1	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes
Bedroom 3	Plasterboard	Foil Anti-glare one side and Reflective other of the Bulk Insulation R3	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	16	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 2	5	Downlights - LED	150	Sealed
Bathroom	2	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bathroom	1	Exhaust Fans	300	Sealed
Corridor	2	Downlights - LED	150	Sealed
WC	1	Downlights - LED	150	Sealed
WC	1	Exhaust Fans	300	Sealed
Stairs	2	Downlights - LED	150	Sealed
Bedroom 1	9	Downlights - LED	150	Sealed
Bedroom 3	5	Downlights - LED	450	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200
Bedroom 2	1	1200
Bathroom	1	1200
Bedroom 1	1	1200
Bedroom 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	No Insulation, Only an Air Gap	0.85	Dark

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).