

Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0008544120

Generated on 05 Apr 2023 using AccuRate Sustainability V2.4.3.21
SP1

Property

Address 44 Cadaga Road , Gateshead ,
NSW , 2290

Lot/DP Lot 499 DP 224374

NatHERS climate zone 15

Accredited assessor



Rachel Clarke

Building Sustainability

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0294204414

Accreditation No. 20824

Assessor Accrediting Organisation ABSA



Verification



To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=DzJjSJAlc .
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
0008544108-01	1	22.06	21.39	43.46	7.4
0008544116-01	2	44.69	21.93	66.62	6

National Construction Code (NCC) requirements

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

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

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

Explanatory Notes

About this report

This is a summary of NCC Class 1 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. 0008544108-01

Generated on 05 Apr 2023 using AccuRate Sustainability V2.4.3.21 SP1

Property

Address Unit 1, 44 Cadaga Road , Gateshead ,
NSW , 2290

Lot/DP Lot 499 DP 224374

NCC Class* 1a

Type New Home

Plans

Main Plan BGYQW

Prepared by MP

Construction and environment

Assessed floor area (m²*)	Exposure Type
Conditioned* 138.3	Suburban
Unconditioned* 30.4	NatHERS climate zone
Total 168.7	15
Garage 17.4	



Accredited assessor

Name Rachel Clarke

Business name Building Sustainability

Email rclarke@buildingsustainability.com.au

Phone 0294204414

Accreditation No. 20824

Assessor Accrediting Organisation

ABSA

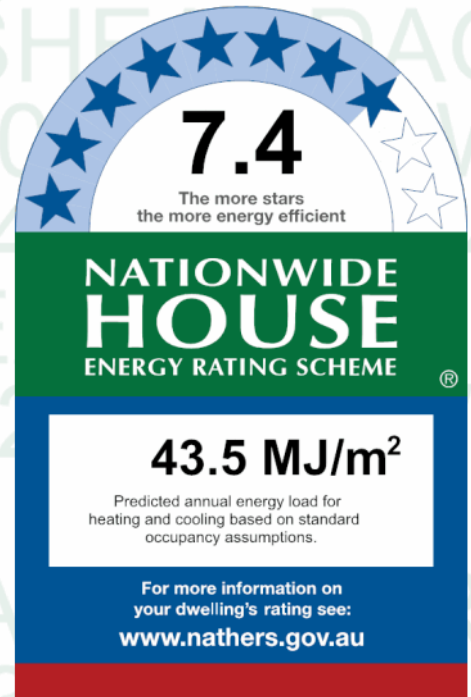
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

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

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

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



Thermal performance

Heating	Cooling
22.1	21.4
MJ/m²	MJ/m²

About the rating

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

Verification

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Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.4	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
bath/laundry	ALM-002-03 A	1	800	900	Sliding	45	NE	None
bed 1	ALM-001-03 A	2	1650	750	Awning	60	NE	None
bed 1	ALM-001-03 A	3	1650	750	Awning	60	NE	None
kitchen/dining/family	ALM-002-03 A	4	1300	6000	Other	00	NE	None
kitchen/dining/family	ALM-002-03 A	5	2400	2050	Sliding	45	SE	None
kitchen/dining/family	ALM-001-03 A	6	1650	1100	Awning	60	SE	None
kitchen/dining/family	ALM-001-03 A	7	800	850	Awning	90	NE	None
living	ALM-002-03 A	7	1950	1100	Sliding	30	NW	None
living	ALM-001-03 A	8	2200	650	Awning	60	NE	None
ensuite	ALM-002-03 A	9	800	900	Sliding	45	NE	None
bed 3	ALM-001-03 A	10	1750	1100	Awning	60	NE	None
bed 4	ALM-001-03 A	11	1750	1100	Awning	60	NE	None
bed 4	ALM-001-03 A	12	1750	1100	Awning	60	SE	None
bath	ALM-002-03 A	13	800	900	Sliding	45	SE	None
bed 2	ALM-002-03 A	14	2100	2050	Sliding	45	NW	None
bed 2	ALM-001-03 A	15	2200	650	Awning	60	NE	None

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	



Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
garage	2000	2400	0	NW
living	2300	950	100	NW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Plasterboard	50	Medium		No
EW-004	Fibre-cement sheet/Plasterboard	50	Medium		No
EW-006	Brick wall/Plasterboard	50	Medium	Polystyrene extruded (k = 0.028): R0.7	No
EW-007	Fibre-cement sheet/Plasterboard	50	Medium	Glass fibre batt: R3.0	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
garage	EW-002	2700	5350	NE		Yes
garage	EW-002	2700	3220	NW		No
bath/laundry	EW-006	2700	2000	NE		Yes
bed 1	EW-006	2700	3950	NE		Yes
bed 1	EW-006	2700	1200	SE		Yes
kitchen/dining/family	EW-006	3508	6900	NE	400	Yes
kitchen/dining/family	EW-006	3232	4000	SE	3000	Yes
kitchen/dining/family	EW-006	2956	5200	SW	400	Yes
kitchen/dining/family	EW-006	2700	1100	NE		Yes
living	EW-006	2700	700	NW		Yes
living	EW-006	2700	1400	SW		Yes
living	EW-006	2700	2600	NW	1300	No
living	EW-006	2700	1357	NE		Yes
ensuite	EW-007	2700	3150	NE		No
ensuite	EW-007	2700	1850	NW		Yes
bed 3	EW-007	2700	3750	NE		No
bed 4	EW-007	2700	4450	NE		No
bed 4	EW-007	2400	3150	SE		No

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
bed 4	EW-007	2700	600	SW		Yes
bath	EW-007	2700	2500	SE		Yes
bed 2	EW-007	2700	700	NW		Yes
bed 2	EW-007	2400	1000	SW		Yes
bed 2	EW-007	2400	2600	NW		Yes
bed 2	EW-007	2400	900	NE		Yes
bed 2	EW-007	2700	700	NW		Yes
roof	EW-004	800	3100	SE		No
roof	EW-004	1100	700	SW		No
roof	EW-004	300	5400	SW		No
roof	EW-004	600	2600	SE		No
roof	EW-004	600	2600	NW		No
roof	EW-004	300	5900	SW		No
roof	EW-004	800	3100	NW		No

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-001	Plasterboard	133.87	
IW-002	Plasterboard/Brick wall	74.34	

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
garage/Ground	as_FLOR-B002 #1006 © 150mm Concrete Floor slab (no insul)	17.40			
bath/laundry/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	6.30			Ceramic tile
bed 1/Ground	as_FLOR-B002 #1001 © 150mm Concrete Floor slab with carpet-underfelt(no insul)	12.20			Carpet 10 + rubber underlay 8
kitchen/dining/family/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	28.60			Ceramic tile
kitchen/dining/family/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	11.00			Ceramic tile
living/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	30.90			Ceramic tile
ensuite/garage	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	5.90			Ceramic tile
bed 3/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	5.30			Carpet underlay (felt)
bed 3/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	3.80			Carpet underlay (felt)
bed 3/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.70			Carpet underlay (felt)

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
bed 4/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.10			Carpet underlay (felt)
bed 4/bed 1	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	9.90			Carpet underlay (felt)
bed 4/kitchen/dining/family	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.40			Carpet underlay (felt)
bed 4/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	0.70			Carpet underlay (felt)
bath/kitchen/dining/family	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	6.50			Ceramic tile
bath/living	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	0.20			Ceramic tile
hall/stairs/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	11.40			Carpet underlay (felt)
bed 2/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	2.00			Carpet underlay (felt)
bed 2/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	15.00			Carpet underlay (felt)
roof/ensuite	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	5.90		R4.0	
roof/bed 3	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	12.00		R4.0	
roof/bed 4	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	13.70		R4.0	
roof/bath	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	6.80		R4.0	
roof/hall/stairs	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	11.40		R4.0	
roof/bed 2	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	17.20		R4.0	

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
ensuite/garage	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
bed 3/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 2/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 3/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/bed 1	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/kitchen/dining/family	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bath/kitchen/dining/family	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
bed 3/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
hall/stairs/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 2/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bath/living	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
roof/ensuite	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 3	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 4	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bath	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/hall/stairs	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 2	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
No Data Available				

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-A021 #E017 © Horiz pitch Colourbond steel roof + Anticon R1.0 insul with R4.0 bulk insul + Plasterb'd ceiling under	R5.0	85	Dark
as_ROOF-A051 #3015 © 5-10 deg Colourbond steel roof + Anticon R1.0 insul with no ceiling under	R1.0	50	Medium
bed 2 roof	R5.0	50	Medium
as_ROOF-B026 #1001 © Framed roof with w/p membrane and tiles-no insul_pb ceiling under		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.

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Disclaimer

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

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

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m; farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10m 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. 0008544116-01

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Property

Address Unit 2, 44 Cadaga Road , Gateshead ,
NSW , 2290

Lot/DP Lot 499 DP 224374

NCC Class* 1a

Type New Home

Plans

Main Plan BGYQW

Prepared by MP

Construction and environment

Assessed floor area (m²)*	Exposure Type
Conditioned* 136.3	Suburban
Unconditioned* 30.4	NatHERS climate zone
Total 166.7	15
Garage 17.4	



Accredited assessor

Name Rachel Clarke

Business name Building Sustainability

Email rclarke@buildingsustainability.com.au

Phone 0294204414

Accreditation No. 20824

Assessor Accrediting Organisation

ABSA

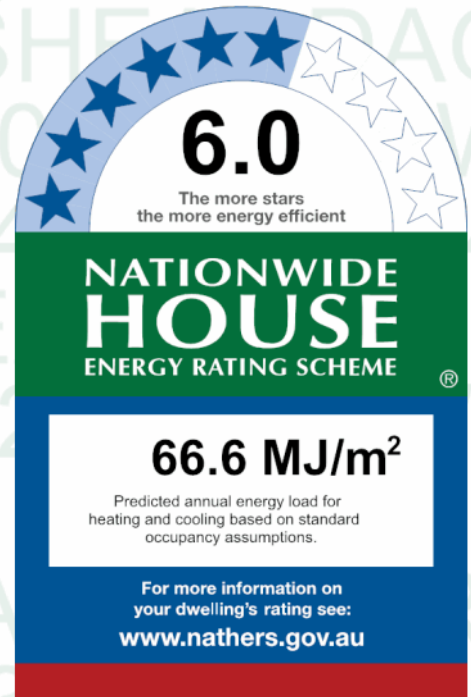
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

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

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

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



Thermal performance

Heating	Cooling
44.7	21.9
MJ/m²	MJ/m²

About the rating

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

Verification

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

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





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.4	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
bath/laundry	ALM-002-03 A	1	800	900	Sliding	45	SW	None
bed 1	ALM-001-03 A	2	1650	800	Awning	60	SW	None
bed 1	ALM-001-03 A	3	1650	800	Awning	60	SW	None
kitchen/dining/family	ALM-002-03 A	4	600	2850	Other	00	SW	None
kitchen/dining/family	ALM-002-03 A	6	2400	2050	Sliding	45	SE	None
kitchen/dining/family	ALM-001-03 A	5	1650	1100	Awning	60	SE	None
kitchen/dining/family	ALM-002-03 A	8	850	3900	Other	00	NE	None
kitchen/dining/family	ALM-001-03 A	9	850	1150	Awning	90	SE	None
living	ALM-002-03 A	10	2250	1100	Sliding	11	NW	None
living	ALM-002-03 A	11	500	950	Other	00	NW	None
living	ALM-001-03 A	12	2200	650	Awning	60	SW	None
ensuite	ALM-002-03 A	13	800	900	Sliding	45	SW	None
bed 3	ALM-001-03 A	14	1750	1100	Awning	60	SW	None
bed 4	ALM-001-03 A	15	1750	1100	Awning	60	SW	None
bed 4	ALM-001-03 A	15	1750	1100	Awning	60	SE	None
bath	ALM-002-03 A	17	800	900	Sliding	45	SE	None
bed 2	ALM-002-03 A	18	2100	2050	Sliding	45	NW	None
bed 2	ALM-001-03 A	19	2200	650	Awning	60	SW	None

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight type and performance

Skylight ID **Skylight description**

No Data Available

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
garage	2400	2300	0	NW
living	2200	950	100	NW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Plasterboard	50	Medium		No
EW-004	Fibre-cement sheet/Plasterboard	50	Medium		No
EW-005	Fibre-cement sheet/Plasterboard	50	Medium	Glass fibre batt: R3.0	No
EW-008	Brick wall/Plasterboard	50	Medium	Polystyrene extruded (k = 0.028): R0.7	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
garage	EW-002	2700	5350	SW		Yes
garage	EW-002	2700	3220	NW		No
bath/laundry	EW-008	2700	2000	SW		Yes
bed 1	EW-008	2700	3950	SW		Yes
bed 1	EW-008	2700	1200	SE		Yes
kitchen/dining/family	EW-008	2700	6600	SW	400	Yes
kitchen/dining/family	EW-008	3000	4000	SE	3000	Yes
kitchen/dining/family	EW-008	3287	5100	NE	400	Yes
kitchen/dining/family	EW-008	2700	1100	SE		Yes
living	EW-008	2700	700	NW		Yes
living	EW-008	2700	1100	NE		Yes
living	EW-008	2700	2600	NW	1300	No
living	EW-008	2700	1600	SW		Yes

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
ensuite	EW-005	2700	3150	SW		No
ensuite	EW-005	2700	1850	NW		Yes
bed 3	EW-005	2700	3750	SW		No
bed 4	EW-005	2700	4450	SW		No
bed 4	EW-005	2700	3150	SE		No
bed 4	EW-005	2700	600	NE		Yes
bath	EW-005	2700	2500	SE		Yes
bed 2	EW-005	2700	700	NW		Yes
bed 2	EW-005	2400	1100	NE		Yes
bed 2	EW-005	2400	2600	NW		Yes
bed 2	EW-005	2400	1050	SW		Yes
bed 2	EW-005	2700	800	NW		Yes
roof	EW-004	600	2400	SE		No
roof	EW-004	1100	700	NE		No
roof	EW-004	800	3100	SE		No
roof	EW-004	800	3100	NW		No
roof	EW-004	450	6000	NE		No
roof	EW-004	600	2400	NW		No
roof	EW-004	450	5300	NE		No

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-001	Plasterboard	135.49	
IW-002	Plasterboard/Brick wall	74.34	

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
garage/Ground	as_FLOR-B002 #1006 © 150mm Concrete Floor slab (no insul)	17.40			
bath/laundry/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	6.30			Ceramic tile
bed 1/Ground	as_FLOR-B002 #1001 © 150mm Concrete Floor slab with carpet-underfelt(no insul)	12.20			Carpet 10 + rubber underlay 8
kitchen/dining/family/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	27.70			Ceramic tile
kitchen/dining/family/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	11.00			Ceramic tile
living/Ground	as_FLOR-B002 #1005 © 150mm Concrete Floor slab with ceramic tiles (no insul)	29.50			Ceramic tile
ensuite/garage	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	5.90			Ceramic tile

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
bed 3/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	5.30			Carpet underlay (felt)
bed 3/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	3.80			Carpet underlay (felt)
bed 3/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.70			Carpet underlay (felt)
bed 4/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.10			Carpet underlay (felt)
bed 4/bed 1	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	9.90			Carpet underlay (felt)
bed 4/kitchen/dining/family	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	1.40			Carpet underlay (felt)
bed 4/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	0.70			Carpet underlay (felt)
bath/kitchen/dining/family	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	6.50			Ceramic tile
bath/living	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under	0.20			Ceramic tile
hall/stairs/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	11.40			Carpet underlay (felt)
bed 2/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	2.30			Carpet underlay (felt)
bed 2/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under	15.00			Carpet underlay (felt)
roof/ensuite	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	5.90		R4.0	
roof/bed 3	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	12.00		R4.0	
roof/bed 4	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	13.70		R4.0	
roof/bath	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	6.80		R4.0	
roof/hall/stairs	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	11.40		R4.0	
roof/bed 2	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	17.50		R4.0	

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
ensuite/garage	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
bed 3/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 2/garage	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 3/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/bath/laundry	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
bed 4/bed 1	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/kitchen/dining/family	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bath/kitchen/dining/family	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
bed 3/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
hall/stairs/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 2/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bed 4/living	as_FLOR-B010 #1001 © Framed flr with carpet-underfelt - PB ceiling under		No
bath/living	as_FLOR-B010 #1005 © Framed flr with ceramic tiles - PB ceiling under		No
roof/ensuite	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 3	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 4	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bath	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/hall/stairs	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No
roof/bed 2	as_CEIL-A001.flr - 2017 © 10mm Plasterboard ceiling fixed to ceiling joists above + R4.0 bulk insulation	R4.0	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
No Data Available				

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-A021 #E017 © Horiz pitch Colourbond steel roof + Anticon R1.0 insul with R4.0 bulk insul + Plasterb'd ceiling under	R5.0	85	Dark
as_ROOF-A051 #3015 © 5-10 deg Colourbond steel roof + Anticon R1.0 insul with no ceiling under	R1.0	50	Medium
bed 2 roof	R5.0	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 10m 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).