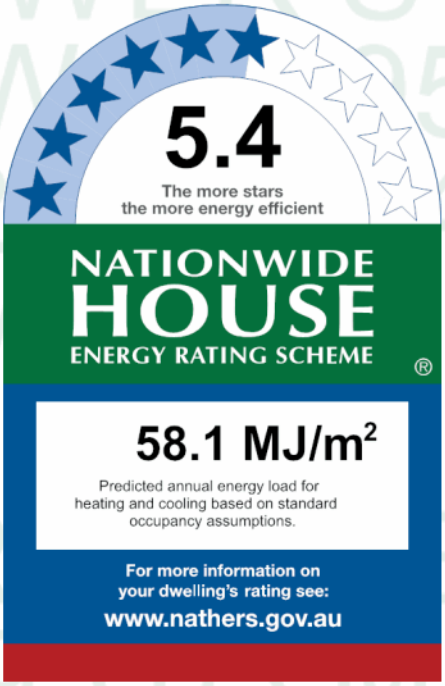
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008621096

Generated on 03 May 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	44 Bower Street , Manly , NSW , 2095
Lot/DP	22/8075
NCC Class*	1A
Type	New Dwelling

Plans

Main plan	Plans Maset Set Rev B 040523
Prepared by	Madeleine Blanchfield Architects

Construction and environment

Assessed floor area (m^2)*

Conditioned*	332.0
Unconditioned*	74.0
Total	406.0
Garage	68.0

Exposure type

Suburban

NatHERS climate zone

56

Thermal performance

Heating	Cooling
38.4	**19.7**
MJ/m^2	MJ/m^2

Accredited assessor

Name	James Cross
Business name	Northern Aspect Energy Consultants
Email	james@northernaspectenergy.com.au
Phone	0499922755
Accreditation No.	61671
Assessor Accrediting Organisation	ABSA
Declaration of interest	file amended on behalf of previous assessor ABSA 20733

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=PaDWoHzki.
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

Concrete block walls to basement level. R1.0 insulation to walls of lounge and stair

Ground floor and level 1 wall construction: R2.5 EPS or bulk insulation to stone clad and dincel external

walls

150mm min Concrete floor slabs, Stone/tiles to ground floor, timber to upper, tiles to wet areas.

R1.0 insulation under basement and ground floor (excluding garage) slabs on ground

R2.5 insulation (eg. 50mm soffit board) insulation to ceiling of first floor

Medium/concrete roof colour simulated. R1.0 insulation to top of roof slabs.

Glazing throughout to meet performance: Uw3.6, SHGCw 0.54 . CSIRO default equivalent of thermally

broken aluminum frames with double glazed clear, with air fill (please see note A below).

Skylights to be double glazed clear, to meet performance of : Uw4.2, SHGCw 0.72, no external or

internal shading required to skylight

IC rated coverable, non vented LED downlights simulated, maximum allocation: Lounge: 6, Powder: 1,

Study: 4, Remainder ground floor: 10, TV Room: 4, Master Suite: 10, Master Ens: 2, Bed 2: 5, Bed 2 Ens: 2,

Laundry: 2, Bed 3 4, Bed 3 Ens 2, Foyer 3

Exhaust fans throughout to be sealed units allocated to bathrooms & WCs & kitchen range.

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
ATB-004-01 B	ATB-004-01 B Al Thermally Broken B DG Air Fill Clear-Clear	3.6	0.54	0.51	0.57
ATB-003-01 B	ATB-003-01 B Al Thermally Broken A DG Air Fill Clear-Clear	3.6	0.47	0.45	0.49

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Lounge	ATB-004-01 B	n/a	1690	620	n/a	00	N	No
Lounge	ATB-004-01 B	n/a	2500	3200	n/a	45	E	No
Study Guest	ATB-004-01 B	n/a	3120	3616	n/a	45	E	Yes
Kitchen/Living	ATB-004-01 B	n/a	3660	2941	n/a	60	N	No
Kitchen/Living	ATB-004-01 B	n/a	3660	8825	n/a	60	N	No
Kitchen/Living	ATB-004-01 B	n/a	3660	1500	n/a	00	E	Yes
Kitchen/Living	ATB-004-01 B	n/a	3120	1050	n/a	00	S	No
Kitchen/Living	ATB-004-01 B	n/a	3120	3616	n/a	45	S	No
Kitchen/Living	ATB-003-01 B	n/a	3120	1300	n/a	90	S	No
Kitchen/Living	ATB-004-01 B	n/a	3120	3050	n/a	00	W	No
Kitchen/Living	ATB-003-01 B	n/a	3120	1050	n/a	90	W	No
Kitchen/Living	ATB-004-01 B	n/a	3660	1500	n/a	00	W	Yes
Bedroom 2	ATB-004-01 B	n/a	2600	3621	n/a	45	N	No
Bed2Ens	ATB-004-01 B	n/a	2250	950	n/a	10	E	No
Laundry	ATB-004-01 B	n/a	1700	2066	n/a	00	E	No
Bedroom 3	ATB-004-01 B	n/a	2600	3100	n/a	00	W	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 3	ATB-004-01 B	n/a	2600	3278	n/a	45	S	Yes
MastEns	ATB-004-01 B	n/a	2600	2500	n/a	45	N	No
Master	ATB-004-01 B	n/a	2600	4972	n/a	45	N	No
TV	ATB-004-01 B	n/a	2600	3701	n/a	45	N	No
TV	ATB-004-01 B	n/a	2600	3701	n/a	45	S	No
Foyer	ATB-004-01 B	n/a	2600	2200	n/a	00	S	Yes
Foyer	ATB-004-01 B	n/a	2600	3166	n/a	00	W	No
Bed3Ens	ATB-004-01 B	n/a	2600	1650	n/a	90	S	No
butlers	ATB-004-01 B	n/a	2760	996	n/a	45	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
DG-Generic-02 A	Glass	4.2	0.72	0.68	0.76

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
Foyer	DG-Generic-02 A	n/a	0	900	900	S	No	No

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
Garden Store	2500	1400	90	E
Garage	2040	820	90	N
Garage	2100	4800	90	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Concrete block, lined	0.50	Medium	Bulk Insulation R1	No
EW-2	Tilt up Concrete	0.50	Medium	Bulk Insulation R2.5	No
EW-3	Tilt up Concrete	0.50	Medium	No insulation	No
EW-4	Tilt up Concrete	0.50	Medium	Bulk Insulation R2	No
EW-5	EPS Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Store	EW-1	2530	6155	S	0	NO
Store	EW-1	2530	4550	W	0	NO
Store	EW-1	2530	6155	N	0	NO
Lounge	EW-1	2530	4955	N	0	NO
Lounge	EW-1	2530	700	N	0	NO
Lounge	EW-1	2530	4495	E	0	NO
Lounge	EW-1	2530	2545	S	0	NO
Lounge	EW-1	2530	762	SW	0	NO
Lounge	EW-1	2530	447	W	0	NO

* Refer to glossary.
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Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Lounge	EW-1	2530	4800	W	0	YES
Lounge	EW-1	2530	155	S	0	YES
Garden Store	EW-1	2530	2945	E	0	NO
Garden Store	EW-1	2530	2500	E	0	NO
Garden Store	EW-1	2530	1945	S	0	NO
Study Guest	EW-2	3750	3590	E	0	NO
Kitchen/Living	EW-2	3751	2950	N	3800	NO
Kitchen/Living	EW-2	3750	8950	N	3800	NO
Kitchen/Living	EW-2	3750	5845	E	0	NO
Kitchen/Living	EW-2	3750	6605	S	1800	YES
Kitchen/Living	EW-2	3750	6700	W	0	NO
Kitchen/Living	EW-2	3750	6600	W	0	NO
Garage	EW-3	3750	1395	E	0	YES
Garage	EW-3	3750	1200	N	0	YES
Garage	EW-3	3750	6450	E	0	NO
Garage	EW-3	3750	6450	S	0	NO
Garage	EW-3	3750	7500	W	0	YES
Bedroom 2	EW-4	2600	3795	N	700	NO
Bedroom 2	EW-4	2600	4495	E	0	NO
Bed2Ens	EW-4	2600	1590	E	0	NO
Laundry	EW-4	2600	2540	E	0	NO
Bedroom 3	EW-4	2600	3100	W	2300	YES
Bedroom 3	EW-4	2600	1440	E	0	NO
Bedroom 3	EW-4	2600	3495	S	600	NO
MastEns	EW-4	2600	2440	N	700	NO
Master	EW-4	2600	3950	S	3250	YES
Master	EW-4	2600	6250	W	0	NO
Master	EW-4	2600	5045	N	700	NO
TV	EW-4	2600	3895	N	3250	YES
TV	EW-5	2600	3050	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)
TV	EW-4	2600	3950	S	650	NO
TV	EW-4	2600	4000	W	25	NO
Foyer	EW-4	2600	2190	S	0	YES
Foyer	EW-4	2600	3195	W	0	YES
Bed3Ens	EW-4	2600	3045	E	0	NO
Bed3Ens	EW-4	2600	1645	S	600	NO
butlers	EW-2	3750	3190	E	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Concrete Block		15.00	No insulation
IW-2 - Single Skin Brick		31.00	Bulk Insulation, No Air Gap R1
IW-3 - Single Skin Brick		149.00	No insulation
IW-4 - Cavity wall, direct fix plasterboard, single gap		18.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Store	Concrete Slab on Ground 100mm	28.00	None	Bulk Insulation in Contact with Floor R1	Bare
Lounge	Concrete Slab on Ground 100mm	36.30	None	Bulk Insulation in Contact with Floor R1	Bare
Garden Store	Concrete Slab on Ground 100mm	18.20	None	Bulk Insulation in Contact with Floor R1	Bare
Study Guest	Concrete Slab on Ground 100mm	12.90	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Kitchen/Living /Store	Concrete Above Plasterboard 100mm	21.00		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Lounge	Concrete Above Plasterboard 100mm	30.40		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Garden Store	Concrete Above Plasterboard 100mm	13.90		No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Concrete Slab on Ground 100mm	70.10	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Concrete Slab on Ground 100mm	50.10	None	No Insulation	Bare
Bedroom 2/Kitchen/Living	Rendered Concrete 150mm	16.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	2.20	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
Bed2Ens/Kitchen/Living	Rendered Concrete 100mm	4.50		No Insulation	Ceramic Tiles 8mm
Laundry/Kitchen/Living	Rendered Concrete 100mm	2.60		No Insulation	Cork Tiles or Parquetry 8mm
Laundry/butlers	Rendered Concrete 100mm	3.00		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Study Guest	Rendered Concrete 100mm	7.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kitchen/Living	Rendered Concrete 100mm	6.80		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Garage	Rendered Concrete 100mm	1.40		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/butlers	Rendered Concrete 100mm	1.20		No Insulation	Cork Tiles or Parquetry 8mm
MastEns/Kitchen/Living	Rendered Concrete 150mm	7.90		No Insulation	Ceramic Tiles 8mm
MastEns	Suspended Concrete Slab 150mm	1.40	Totally Open	No Insulation	Ceramic Tiles 8mm
Master/Kitchen/Living	Rendered Concrete 150mm	33.70		No Insulation	Cork Tiles or Parquetry 8mm
Master	Suspended Concrete Slab 150mm	3.00	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
TV/Kitchen/Living	Rendered Concrete 100mm	15.80		No Insulation	Cork Tiles or Parquetry 8mm
Foyer/Kitchen/Living	Rendered Concrete 100mm	18.20		No Insulation	Cork Tiles or Parquetry 8mm
Bed3Ens/Study Guest	Rendered Concrete 100mm	4.80		No Insulation	Ceramic Tiles 8mm
butlers/Garden Store	Concrete Above Plasterboard 100mm	4.50		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

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

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Lounge	Concrete Above Plasterboard	No Insulation	No
Garden Store	Concrete, Plasterboard	No insulation	No
Garden Store	Concrete Above Plasterboard	No Insulation	No
Study Guest	Concrete	No insulation	No
Study Guest	Rendered Concrete	No Insulation	No
Kitchen/Living	Concrete	No insulation	No
Kitchen/Living	Rendered Concrete	No Insulation	No
Garage	Concrete	No insulation	No
Garage	Rendered Concrete	No Insulation	No
Bedroom 2	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed2Ens	Concrete, Plasterboard	Bulk Insulation R2.5	No
Laundry	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bedroom 3	Concrete, Plasterboard	Bulk Insulation R2.5	No
MastEns	Concrete, Plasterboard	Bulk Insulation R2.5	No
Master	Concrete, Plasterboard	Bulk Insulation R2.5	No
TV	Concrete, Plasterboard	Bulk Insulation R2.5	No
Foyer	Concrete, Plasterboard	Bulk Insulation R2.5	No
Bed3Ens	Concrete, Plasterboard	Bulk Insulation R2.5	No
butlers	Concrete	No insulation	No
butlers	Rendered Concrete	No Insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Lounge	6	Downlights - LED	0	Sealed
Study Guest	4	Downlights - LED	0	Sealed
Kitchen/Living	10	Downlights - LED	0	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed
Bedroom 2	5	Downlights - LED	0	Sealed
Bed2Ens	2	Downlights - LED	0	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Bed2Ens	1	Exhaust Fans	300	Sealed
Laundry	2	Downlights - LED	0	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bedroom 3	5	Downlights - LED	0	Sealed
MastEns	2	Downlights - LED	0	Sealed
MastEns	1	Exhaust Fans	300	Sealed
Master	10	Downlights - LED	0	Sealed
TV	4	Downlights - LED	0	Sealed
Foyer	3	Downlights - LED	0	Sealed
Bed3Ens	2	Downlights - LED	0	Sealed
Bed3Ens	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Insulation, Only an Air Gap	0.50	Medium
Waterproofing Membrane	Bulk Insulation, No Air Gap Above R1	0.50	Medium
Waterproofing Membrane	Bulk Insulation, No Air Gap Above R1	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).