

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0007090863

Generated on 02 Mar 2022 using BERS Pro v4.4.1.5 (3.21)

Property

Address 2A Dukes Place , Emu Plains , NSW ,
2750

Lot/DP 111/1239551

NCC Class* 1A

Type New Dwelling

Plans

Main Plan Plans, Elevations Sections

Prepared by Buildings By Vince

Construction and environment

Assessed floor area (m²)*	Exposure Type
Conditioned* 218.0	Suburban
Unconditioned* 38.0	NatHERS climate zone
Total 256.0	28
Garage 22.0	



Accredited assessor

Name Zoltan Lipovski

Business name EcoMode Design

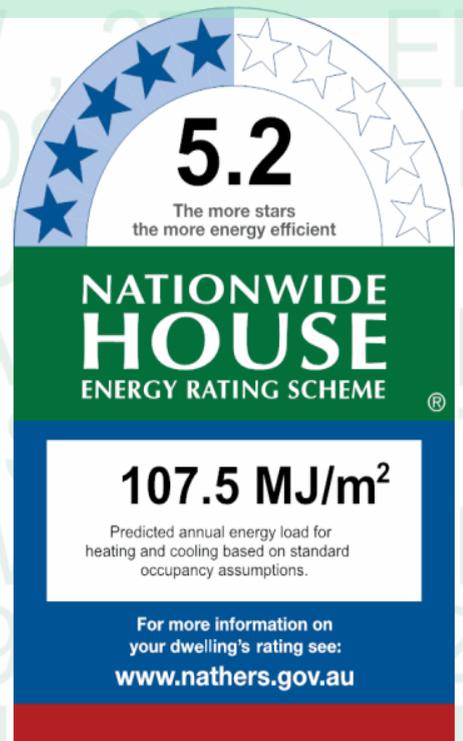
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Accreditation No. 20884

Assessor Accrediting Organisation
ABSA

Declaration of interest Declaration not completed



Thermal performance

Heating	Cooling
54.9	52.6
MJ/m²	MJ/m²

About the rating

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

Verification

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



National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

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-004-03 B	ATB-004-03 B Al Thermally Broken B DG Air Fill High Solar Gain low-E -Clear	3.1	0.49	0.47	0.51
ALM-002-03 A	ALM-002-03 A Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61
ATB-003-03 B	ATB-003-03 B Al Thermally Broken A DG Air Fill High Solar Gain low-E -Clear	3.1	0.39	0.37	0.41
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-03 A	ALM-001-03 A Aluminium A SG High Solar Gain Low-E	5.4	0.49	0.47	0.51

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*
Living	ATB-004-03 B	n/a	1890	1450	n/a	35	N	No
Living	ATB-004-03 B	n/a	1890	1450	n/a	35	N	No
Kitchen/Living	ATB-004-03 B	n/a	1840	1450	n/a	35	E	No
Kitchen/Living	ALM-002-03 A	n/a	2280	4100	n/a	45	S	No
Kitchen/Living	ATB-004-03 B	n/a	1380	3430	n/a	66	S	No
Kitchen/Living	ATB-004-03 B	n/a	1840	1450	n/a	35	W	No
Kitchen/Living	ALM-002-03 A	n/a	2220	4100	n/a	50	W	No
Corridor	ATB-004-03 B	n/a	1190	1450	n/a	45	W	No
Corridor	ATB-003-03 B	n/a	1880	970	n/a	30	E	No
Powder	ALM-001-01 A	n/a	700	1450	n/a	95	E	No
Bath	ALM-001-01 A	n/a	1200	710	n/a	95	W	No
Bath	ALM-001-01 A	n/a	1200	710	n/a	95	N	No
Laundry	ALM-001-01 A	n/a	1200	710	n/a	95	W	No
Bedroom 2	ALM-002-03 A	n/a	1880	1450	n/a	30	W	No
Bedroom 3	ALM-002-03 A	n/a	1840	1450	n/a	30	E	No
WIP	ALM-001-01 A	n/a	1200	710	n/a	95	S	No
Garage	ALM-002-01 A	n/a	1200	1450	n/a	45	E	No
Garage	ALM-002-01 A	n/a	1200	1450	n/a	45	S	No
TV	ALM-002-03 A	n/a	1200	1450	n/a	10	N	No
TV	ALM-002-03 A	n/a	1200	1450	n/a	10	E	No
TV	ALM-002-03 A	n/a	1200	1450	n/a	10	E	No
Bedroom 1	ALM-002-03 A	n/a	1200	1450	n/a	10	S	No
Bedroom 1	ALM-002-03 A	n/a	1200	1450	n/a	10	S	No
Bedroom 1	ALM-002-03 A	n/a	1200	1450	n/a	45	W	No
Bedroom 1	ALM-002-03 A	n/a	1200	1450	n/a	45	W	No
Bedroom 1	ALM-001-03 A	n/a	1200	710	n/a	95	S	No
WIR-Her	ALM-001-01 A	n/a	1200	710	n/a	95	S	No
Bath	ALM-002-01 A	n/a	1200	1450	n/a	10	N	No
Bath	ALM-001-01 A	n/a	1200	710	n/a	95	E	No
Bath	ALM-001-01 A	n/a	1200	710	n/a	95	E	No
WIR-His	ALM-001-01 A	n/a	1200	710	n/a	95	E	No
Study	ALM-002-03 A	n/a	1890	1450	n/a	10	W	No
Corridor	ALM-001-01 A	n/a	1200	710	n/a	95	N	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Corridor	ALM-002-03 A	n/a	1910	1450	n/a	10	E	No
Sitting	ALM-002-03 A	n/a	1200	1450	n/a	45	N	No

Roof window type and performance

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-011-02 W	Glass	2.7	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-02 W	n/a	0	780	1400	W	No	No
Kitchen/Living	VEL-011-02 W	n/a	0	780	1400	W	No	No
Kitchen/Living	VEL-011-02 W	n/a	0	780	1400	W	No	No
Corridor	VEL-011-02 W	n/a	0	1400	780	N	No	No

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
Corridor	2400	1200	90	E
Laundry	2040	820	90	W
Garage	2400	3000	90	N
Garage	2400	820	90	S

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	Anti-glare foil with bulk no gap R2.5	No
EW-2	Brick Veneer	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Single Skin Brick	0.50	Medium	No insulation	No
EW-4	Weatherboard Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-5	Weatherboard Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap 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)
Living	EW-1	2700	4990	N	3700	YES
Kitchen/Living	EW-2	2700	2295	E	2900	YES
Kitchen/Living	EW-2	2700	500	E	5100	YES
Kitchen/Living	EW-2	2700	9400	S	0	NO
Kitchen/Living	EW-2	2700	8195	W	700	NO
Corridor	EW-2	2700	1200	S	2400	YES
Corridor	EW-2	2700	1390	E	2900	NO
Corridor	EW-2	2700	2090	W	1900	YES
Corridor	EW-1	2700	2295	E	0	NO
Powder	EW-2	2700	2390	E	0	YES
Bath	EW-2	2700	2995	W	700	NO
Bath	EW-2	2700	1200	N	5100	YES
Laundry	EW-2	2700	1890	W	700	NO
Bedroom 2	EW-2	2700	1200	S	15200	YES
Bedroom 2	EW-2	2700	3000	W	700	NO
Bedroom 2	EW-2	2700	1300	N	0	YES
Bedroom 2	EW-2	2700	500	W	0	YES
Bedroom 2	EW-2	2700	1863	N	0	NO
Bedroom 3	EW-2	2700	1863	NE	25	NO
Bedroom 3	EW-2	2700	500	E	2000	YES
Bedroom 3	EW-2	2700	1400	N	500	YES
Bedroom 3	EW-2	2700	2000	E	600	YES
Bedroom 3	EW-2	2700	300	N	2500	YES
Bedroom 3	EW-2	2700	995	E	0	NO
WIP	EW-2	2700	990	S	500	YES
Garage	EW-3	2800	3495	N	700	NO
Garage	EW-3	2800	6300	E	600	NO
Garage	EW-3	2800	3495	S	500	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
TV	EW-4	2550	2700	N	6400	YES
TV	EW-4	2550	3495	E	800	NO
Bedroom 1	EW-4	2550	195	E	3100	YES
Bedroom 1	EW-4	2550	3895	S	800	NO
Bedroom 1	EW-4	2550	5500	W	700	YES
Bedroom 1	EW-4	2550	1195	S	6300	YES
WIR-Her	EW-4	2550	2995	S	800	NO
WIR-Her	EW-4	2550	1495	W	700	NO
Bath	EW-2	2550	2295	N	800	YES
Bath	EW-2	2550	3000	E	800	NO
Bath	EW-4	2550	1795	E	800	NO
WIR-His	EW-4	2550	1495	E	800	NO
WIR-His	EW-4	2550	1000	S	1300	YES
WIR-His	EW-4	2550	500	E	1800	YES
WIR-His	EW-4	2550	1295	S	800	NO
Study	EW-4	2550	3990	W	700	NO
Corridor	EW-4	2550	1200	W	3600	YES
Corridor	EW-4	2550	3700	N	700	NO
Corridor	EW-5	900	3300	E	0	NO
Corridor	EW-1	1650	3300	E	800	NO
Corridor	EW-4	900	1200	S	0	YES
Corridor	EW-2	1650	1200	S	13700	YES
Corridor	EW-1	2550	2395	E	2000	YES
Sitting	EW-4	2550	3995	W	700	NO
Sitting	EW-4	2550	2895	N	800	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1	Cavity wall, direct fix plasterboard, single gap	84.00	Bulk Insulation, No Air Gap R1.5
IW-2	Cavity wall, direct fix plasterboard, single gap	137.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living	Waffle pod slab 300 mm 100mm	15.50	None	Waffle Pod 300mm	Bare
Kitchen/Living	Waffle pod slab 300 mm 100mm	59.20	None	Waffle Pod 300mm	Bare
Corridor	Waffle pod slab 300 mm 100mm	18.50	None	Waffle Pod 300mm	Bare
Powder	Waffle pod slab 300 mm 100mm	2.90	None	Waffle Pod 300mm	Ceramic Tiles 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bath	Waffle pod slab 300 mm 100mm	7.70	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Laundry	Waffle pod slab 300 mm 100mm	5.70	None	Waffle Pod 300mm	Ceramic Tiles 8mm
Bedroom 2	Waffle pod slab 300 mm 100mm	10.40	None	Waffle Pod 300mm	Carpet 10mm
Bedroom 3	Waffle pod slab 300 mm 100mm	10.90	None	Waffle Pod 300mm	Carpet 10mm
WIP	Waffle pod slab 300 mm 100mm	2.80	None	Waffle Pod 300mm	Cork Tiles or Parquetry 8mm
Garage	Waffle pod slab 300 mm 100mm	21.80	None	Waffle Pod 300mm	Bare
TV/Kitchen/Living	Timber Above Plasterboard 19mm	2.70		Bulk Insulation R2	Carpet 10mm
TV/Corridor	Timber Above Plasterboard 19mm	1.80		Bulk Insulation R2	Carpet 10mm
TV	Suspended Timber Floor 19mm	9.20	Very Open	Bulk Insulation, Gap to Floor R2	Carpet 10mm
Bedroom 1/Living	Timber Above Plasterboard 19mm	8.40		Bulk Insulation R2	Carpet 10mm
Bedroom 1/Kitchen/Living	Timber Above Plasterboard 19mm	20.40		Bulk Insulation R2	Carpet 10mm
Bedroom 1	Suspended Timber Floor 19mm	0.50	Very Open	Bulk Insulation, Gap to Floor R2	Carpet 10mm
WIR-Her/Kitchen/Living	Timber Above Plasterboard 19mm	4.30		Bulk Insulation R2	Carpet 10mm
Bath/Living	Timber Above Plasterboard 19mm	7.10		Bulk Insulation R2	Ceramic Tiles 8mm
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	2.00		Bulk Insulation R2	Ceramic Tiles 8mm
Bath/WIP	Timber Above Plasterboard 19mm	1.60		Bulk Insulation R2	Ceramic Tiles 8mm
WIR-His/Kitchen/Living	Timber Above Plasterboard 19mm	2.50		Bulk Insulation R2	Carpet 10mm
WIR-His/WIP	Timber Above Plasterboard 19mm	1.40		Bulk Insulation R2	Carpet 10mm
Study/Kitchen/Living	Timber Above Plasterboard 19mm	3.50		Bulk Insulation R2	Carpet 10mm
Study/Bath	Timber Above Plasterboard 19mm	1.70		Bulk Insulation R2	Carpet 10mm
Study/Laundry	Timber Above Plasterboard 19mm	5.50		Bulk Insulation R2	Carpet 10mm
Corridor/Corridor	Timber Above Plasterboard 19mm	13.50		Bulk Insulation R2	Carpet 10mm
Corridor/Powder	Timber Above Plasterboard 19mm	3.00		Bulk Insulation R2	Carpet 10mm
Corridor/Bath	Timber Above Plasterboard 19mm	0.70		Bulk Insulation R2	Carpet 10mm
Corridor/Bedroom 3	Timber Above Plasterboard 19mm	3.40		Bulk Insulation R2	Carpet 10mm
Sitting/Corridor	Timber Above Plasterboard 19mm	3.10		Bulk Insulation R2	Carpet 10mm
Sitting/Bath	Timber Above Plasterboard 19mm	5.40		Bulk Insulation R2	Carpet 10mm
Sitting	Suspended Timber Floor 19mm	2.20	Very Open	Bulk Insulation, Gap to Floor R2	Carpet 10mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Living	Timber Above Plasterboard	Bulk Insulation R2	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R6	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2	No
Corridor	Timber Above Plasterboard	Bulk Insulation R2	No
Powder	Timber Above Plasterboard	Bulk Insulation R2	No
Bath	Timber Above Plasterboard	Bulk Insulation R2	No
Laundry	Timber Above Plasterboard	Bulk Insulation R2	No
Bedroom 2	Plasterboard	Bulk Insulation R6	No
Bedroom 3	Plasterboard	Bulk Insulation R6	No
Bedroom 3	Timber Above Plasterboard	Bulk Insulation R2	No
WIP	Timber Above Plasterboard	Bulk Insulation R2	No
Garage	Plasterboard	Bulk Insulation R6	No
TV	Plasterboard	Bulk Insulation R6	No
Bedroom 1	Plasterboard	Bulk Insulation R6	No
WIR-Her	Plasterboard	Bulk Insulation R6	No
Bath	Plasterboard	Bulk Insulation R6	No
WIR-His	Plasterboard	Bulk Insulation R6	No
Study	Plasterboard	Bulk Insulation R6	No
Corridor	Plasterboard	Bulk Insulation R6	No
Sitting	Plasterboard	Bulk Insulation R6	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
Living	4	Downlights - LED	150	Sealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Corridor	5	Downlights - LED	150	Sealed
Powder	1	Exhaust Fans	300	Sealed
Bath	1	Exhaust Fans	300	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
TV	4	Downlights - LED	150	Sealed
Bedroom 1	6	Downlights - LED	150	Sealed
WIR-Her	1	Downlights - LED	150	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
WIR-His	1	Downlights - LED	150	Sealed
Study	2	Downlights - LED	150	Sealed
Corridor	3	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Sitting	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

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