Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007142821

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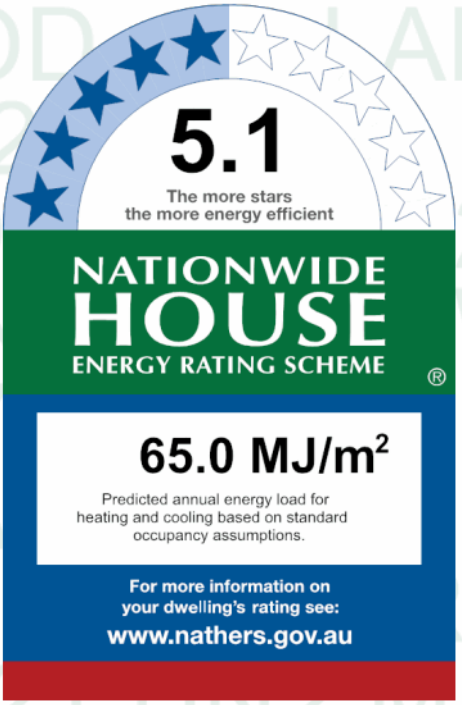

Property

Address	Unit 1, 121 Dove Lane , Warriewood , NSW , 2102
Lot/DP	Lot 7 DP 1251955
NCC Class*	1a
Type	New Home

Plans

Main Plan	0574/20.01.22
Prepared by	PopovBass

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	251.5	Open
Unconditioned*	47.6	**NatHERS climate zone**
Total	299.1	56
Garage	35.5	

Thermal performance

Heating	Cooling
39.4 MJ/m^2	25.6 MJ/m^2

Accredited assessor

Name	B Carr
Business name	STS
Email	ENQUIRIES@SUSTAINABLETHERMALSOLUTIONS.COM.AU
Phone	0420312721
Accreditation No.	DMN/12/1457
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

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.

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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.

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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.

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61
ALM-004-03 A	Aluminium B DG Air Fill High Solar Gain low-E - Clear	4.3	0.53	0.50	0.56

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*
Entry/WC	ALM-004-03 A	W1	3200	1100	Sliding	30	E	None
Entry/WC	ALM-004-03 A	W7	2700	2340	Other	00	E	None
Laundry	ALM-002-03 A	W6	2700	1180	Casement	90	N	None
Kitchen/Living	ALM-004-03 A	W5	2700	7380	Sliding	75	N	None
Kitchen/Living	ALM-004-03 A	W4	2700	5670	Sliding	75	W	None
Kitchen/Living	ALM-004-03 A	W2	2700	2240	Sliding	45	S	None
Kitchen/Living	ALM-004-03 A	W3	2700	2240	Sliding	45	W	None
Study/Hall	ALM-002-03 A	W8	1200	1360	Awning	90	S	None
Bath 2	ALM-002-03 A	W9	600	1650	Awning	90	S	None
Family	ALM-002-03 A	W10	2700	2940	Sliding	45	W	None
Bed 4	ALM-002-03 A	W11	2700	1200	Casement	90	W	None
Bed 4	ALM-002-03 A	W12	2700	3600	Sliding	45	N	None
Bed 3	ALM-002-03 A	W13	2700	3600	Sliding	45	N	None
Bed 2	ALM-002-03 A	W14	2700	3600	Sliding	45	N	None
Ens 1	ALM-002-03 A	W15	2700	1180	Casement	90	N	None
Bed 1	ALM-002-03 A	W16	1200	2839	Awning	10	N	None
Bed 1	ALM-002-03 A	W17	2700	3000	Sliding	45	E	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	

* Refer to glossary.

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry/WC	2700	900	90	E
Garage	2700	5999	0	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-002	Fibre-cement sheet/Plasterboard	30	Light	Rockwool batt: R2.5	Yes
EW-003	Brick wall/Plasterboard	30	Light	Rockwool batt: R2.5	Yes
EW-004	Retaining Concrete wall/Plasterboard	50	Medium		No
EW-005	Plasterboard	85	Dark	Rockwool batt: R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry/WC	EW-003	5400	2900	E	1500	Yes
Entry/WC	EW-003	5400	5775	S		No
Garage	EW-005	3400	2150	S	2000	Yes
Garage	EW-002	3400	6000	E	800	Yes
Garage	EW-005	3400	6000	N		No
Garage	EW-004	700	3636	S		No
Garage	EW-004	700	5676	W		No
Laundry	EW-005	2700	3356	N	1000	Yes
Kitchen/Living	EW-005	2700	9539	N	7435	Yes
Kitchen/Living	EW-002	2700	5671	W	3200	Yes
Kitchen/Living	EW-003	2700	10845	S		No
Kitchen/Living	EW-005	2700	2900	W	3200	Yes
Study/Hall	EW-003	2700	2700	S		No
Study/Hall	EW-002	2700	1100	W	1000	Yes
Study/Hall	EW-005	2800	10250	S		No
Bath 2	EW-003	2700	1825	S		No
Family	EW-003	2700	6100	S		No
Family	EW-003	2700	2941	W	3200	Yes

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 4	EW-002	2700	4400	W	1000	Yes
Bed 4	EW-005	2700	3601	N	300	Yes
Bed 3	EW-005	2700	3601	N	300	Yes
Bed 2	EW-005	2700	3601	N	300	Yes
Ens 1	EW-005	2700	1181	N	1000	Yes
Ens 1	EW-005	2700	750	N		No
Bed 1	EW-005	2700	5820	N		No
Bed 1	EW-002	2700	3001	E	1000	Yes
Bed 1	EW-002	2700	3001	E	1000	Yes
Bed 1	EW-005	5500	2270	S	3000	Yes
Bed 1	EW-005	2800	6540	S		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	276.69	Glass fibre batt: R2.0

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry/WC/Ground	Concrete Suspended Slab 100 mm: ceramic tile/R1.5	11.70		R1.5	Ceramic tile
Entry/WC/Ground	Concrete Suspended Slab 100 mm: timber/R1.5	21.60		R1.5	
Garage/Ground	Concrete Slab 200 mm: bare/bare	35.50			
Laundry/Ground	Concrete Suspended Slab 100 mm: ceramic tile/R1.5	7.00		R1.5	Ceramic tile
Kitchen/Living/Ground	Concrete Suspended Slab 100 mm: timber/R1.5	83.70		R1.5	
Study/Hall/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	22.00		R1.5	
Bath 2/Kitchen/Living	Timber (hardwood): ceramic tile/R1.5/plasterboard	5.10		R1.5	Ceramic tile
Family/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	17.30		R1.5	
Bed 4/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	16.00		R1.5	Carpet 10 + rubber underlay 8
Bed 3/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	16.00		R1.5	Carpet 10 + rubber underlay 8
Bed 2/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	9.50		R1.5	Carpet 10 + rubber underlay 8
Bed 2/Laundry	Timber (hardwood): carpet/R1.5/plasterboard	3.00		R1.5	Carpet 10 + rubber underlay 8
Bed 2/Entry/WC	Timber (hardwood): carpet/R1.5/plasterboard	3.50		R1.5	Carpet 10 + rubber underlay 8
Ens 1/Laundry	Timber (hardwood): ceramic tile/R1.5/plasterboard	4.00		R1.5	Ceramic tile
Ens 1/Entry/WC	Timber (hardwood): ceramic tile/R1.5/plasterboard	5.40		R1.5	Ceramic tile
Bed 1/Entry/WC	Timber (hardwood): carpet/R1.5/plasterboard	3.30		R1.5	Carpet 10 + rubber underlay 8

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed 1/Garage	Timber (hardwood): carpet/R1.5/plasterboard	34.50		R1.5	Carpet 10 + rubber underlay 8

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 2/Entry/WC	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Ens 1/Entry/WC	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Bed 1/Entry/WC	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Bed 1/Garage	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Bed 2/Laundry	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Ens 1/Laundry	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Study/Hall/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Bath 2/Kitchen/Living	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Family/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Bed 4/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Bed 3/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No
Bed 2/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	R1.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Entry/WC	3	Downlight		Sealed
Laundry	2	Downlight		Sealed
Kitchen/Living	33	Downlight		Sealed
Bath 2	2	Downlight		Sealed
Family	6	Downlight		Sealed
Bed 4	6	Downlight		Sealed
Bed 3	6	Downlight		Sealed
Bed 2	6	Downlight		Sealed
Ens 1	4	Downlight		Sealed
Bed 1	15	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1400

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Metal deck roof: AG foil (sarking): air gap: R4.0: 10mm plasterboard	R4.0	90	Dark

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

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

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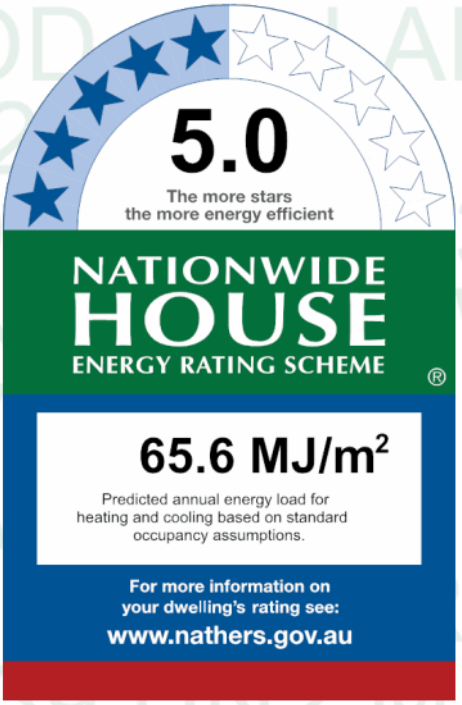

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Business name	STS
Email	ENQUIRIES@SUSTAINABLETHERMALSOLUTIONS.COM.AU
Phone	0420312721
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Default* windows

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				SHGC lower limit	SHGC upper limit
ALM-005-03 A	Aluminium A DG Argon Fill High Solar Gain low-E - Clear	4.1	0.47	0.45	0.49
ALM-006-03 A	Aluminium B DG Argon Fill High Solar Gain low-E - Clear	4.1	0.52	0.49	0.55

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed 4	ALM-006-03 A	W1	2700	5770	Sliding	75	N	None
Kitchen/Living	ALM-006-03 A	W5	2700	1315	Other	00	E	None
Kitchen/Living	ALM-006-03 A	W8	2700	1485	Other	00	N	None
Bath	ALM-005-03 A	W3	600	1500	Awning	90	S	None
Family	ALM-006-03 A	W2	2700	2412	Sliding	45	E	None
Family	ALM-006-03 A	W10	2700	2835	Sliding	45	N	None
Landing (L1)	ALM-006-03 A	W4	2700	2520	Other	00	S	None
Bed 1	ALM-006-03 A	W12	2700	1204	Other	00	S	None
Bed 1	ALM-006-03 A	11	2700	2412	Sliding	45	E	None
Bed 1	ALM-006-03 A	W21	2400	5870	Sliding	75	N	None
Ens 1	ALM-005-03 A	W20	2400	1250	Awning	50	N	None
Bed 2	ALM-005-03 A	W18	2400	3600	Awning	75	N	None
Bed 3	ALM-005-03 A	W17	2400	3535	Awning	75	N	None
Bath (Upper)	ALM-006-03 A	W15	600	1945	Sliding	90	W	None
Study/Landing (Upper)	ALM-006-03 A	W19	2400	1200	Other	00	N	None
Study/Landing (Upper)	ALM-006-03 A	w13	2700	1200	Other	00	S	None
Living	ALM-006-03 A	W6	2700	4700	Sliding	45	W	None
Living	ALM-006-03 A	W7	2700	1485	Other	00	N	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								

* Refer to glossary.

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	4800	0	E
Entry	2700	1000	90	E
Kitchen/Living	2400	920	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Brick wall/Plasterboard	85	Dark	Rockwool batt: R2.5	Yes
EW-002	Fibre-cement sheet/Plasterboard	30	Light	Rockwool batt: R2.5	Yes
EW-004	Retaining Concrete wall/Plasterboard	50	Medium	Polystyrene expanded: R1.5	No
EW-005	Plasterboard	85	Dark	Rockwool batt: R2.5	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-004	2700	6400	S		No
Garage	EW-004	2700	1300	W		No
Garage	EW-001	2700	6000	E	880	Yes
Garage	EW-001	2700	2280	N	1500	Yes
Entry	EW-001	5400	1200	E	3050	Yes
Entry	EW-002	2700	4468	N		No
Entry	EW-004	2700	2468	S		No
Entry	EW-004	2700	1875	W		No
Entry	EW-002	5400	2280	N		No
Bed 4	EW-004	2700	7476	S		No
Bed 4	EW-004	2700	4000	W		No
Bed 4	EW-001	2700	7500	N		No

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-002	2700	2000	E	2500	Yes
Kitchen/Living	EW-002	2700	7150	S		No
Kitchen/Living	EW-002	2700	2435	W	9425	Yes
Kitchen/Living	EW-002	2700	7450	N		No
Bath	EW-001	2700	1350	W	2560	Yes
Bath	EW-001	2700	1650	S		No
Family	EW-001	2700	5400	S		No
Family	EW-002	2700	6160	E	1000	Yes
Family	EW-002	2700	2900	N	1400	Yes
Landing (L1)	EW-002	2700	4436	N		No
Landing (L1)	EW-001	2700	2560	S	1500	Yes
Bed 1	EW-001	2700	8530	S	800	Yes
Bed 1	EW-002	2700	6160	E	1600	Yes
Bed 1	EW-005	2700	6500	N	1300	Yes
Ens 1	EW-005	2700	1800	N	1300	Yes
Bed 2	EW-005	2700	3650	N	1300	Yes
Bed 3	EW-005	2700	3650	N	1300	Yes
Bath (Upper)	EW-002	2700	3200	S		No
Bath (Upper)	EW-002	2700	1946	W	8600	Yes
Study/Landing (Upper)	EW-005	2700	1800	N	1300	Yes
Study/Landing (Upper)	EW-002	2700	4740	S		No
Study/Landing (Upper)	EW-001	2700	500	E	11700	Yes
Study/Landing (Upper)	EW-001	2700	1272	S	800	Yes
Living	EW-002	4800	5500	S	2000	Yes
Living	EW-002	4600	5566	W	3600	Yes
Living	EW-002	5900	5400	N		No

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-001	Plasterboard	201.60	Glass fibre batt: R2.0

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage/Ground	Concrete Slab 200 mm: bare/bare	40.00			
Entry/Ground	Concrete Suspended Slab 200 mm: timber/R1.5	20.50		R1.5	
Bed 4/Ground	Concrete Suspended Slab 200 mm: carpet/R1.5	30.40		R1.5	Carpet 10 + rubber underlay 8

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living/Ground	Concrete Suspended Slab 200 mm: ceramic tile/R1.5	22.50		R1.5	Ceramic tile
Kitchen/Living/Bed 4	Timber (hardwood): ceramic tile/R1.5/plasterboard	4.00		R1.5	Ceramic tile
Kitchen/Living/Ground	Concrete Suspended Slab 200 mm: timber/R1.5	7.60		R1.5	
Kitchen/Living/Bed 4	Timber (hardwood): bare/R1.5/plasterboard	25.80		R1.5	
Bath/Garage	Timber (hardwood): ceramic tile/R1.5/plasterboard	4.90		R1.5	Ceramic tile
Family/Outdoor Air	Timber (hardwood): bare/R1.5/plasterboard	4.80		R1.5	
Family/Garage	Timber (hardwood): bare/R1.5/plasterboard	28.50		R1.5	
Landing (L1)/Garage	Timber (hardwood): bare/R1.5/plasterboard	4.70		R1.5	
Landing (L1)/Entry	Timber (hardwood): bare/R1.5/plasterboard	18.50		R1.5	
Bed 1/Family	Timber (hardwood): carpet/R1.5/plasterboard	33.00		R2.0	Carpet 10 + rubber underlay 8
Bed 1/Bath	Timber (hardwood): carpet/R1.5/plasterboard	4.00		R2.0	Carpet 10 + rubber underlay 8
Bed 1/Landing (L1)	Timber (hardwood): carpet/R1.5/plasterboard	2.60		R2.0	Carpet 10 + rubber underlay 8
Bed 1/Outdoor Air	Timber (hardwood): carpet/R1.5/plasterboard	1.80		R2.0	Carpet 10 + rubber underlay 8
Ens 1/Bath	Timber (hardwood): ceramic tile/R1.5/plasterboard	1.00		R1.5	Ceramic tile
Ens 1/Landing (L1)	Timber (hardwood): ceramic tile/R1.5/plasterboard	8.60		R1.5	Ceramic tile
Bed 2/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	16.70		R2.0	Carpet 10 + rubber underlay 8
Bed 3/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	16.70		R2.0	Carpet 10 + rubber underlay 8
Bath (Upper)/Outdoor Air	Timber (hardwood): ceramic tile/R1.5/plasterboard	1.70		R1.5	Ceramic tile
Bath (Upper)/Kitchen/Living	Timber (hardwood): ceramic tile/R1.5/plasterboard	4.40		R1.5	Ceramic tile
Study/Landing (Upper)/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	9.00		R1.5	
Study/Landing (Upper)/Outdoor Air	Timber (hardwood): bare/R1.5/plasterboard	1.70		R1.5	
Study/Landing (Upper)/Landing (L1)	Timber (hardwood): bare/R1.5/plasterboard	5.80		R1.5	
Living/Ground	Concrete Suspended Slab 200 mm: timber/R1.5	30.00		R1.5	

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath/Garage	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Family/Garage	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Landing (L1)/Garage	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Landing (L1)/Entry	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Kitchen/Living/Bed 4	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Kitchen/Living/Bed 4	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Bed 2/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	R2.0	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed 3/Kitchen/Living	Timber (hardwood): carpet/R1.5/plasterboard	R2.0	No
Bath (Upper)/Kitchen/Living	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Study/Landing (Upper)/Kitchen/Living	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No
Bed 1/Bath	Timber (hardwood): carpet/R1.5/plasterboard	R2.0	No
Ens 1/Bath	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Bed 1/Family	Timber (hardwood): carpet/R1.5/plasterboard	R2.0	No
Bed 1/Landing (L1)	Timber (hardwood): carpet/R1.5/plasterboard	R2.0	No
Ens 1/Landing (L1)	Timber (hardwood): ceramic tile/R1.5/plasterboard	R1.5	No
Study/Landing (Upper)/Landing (L1)	Timber (hardwood): bare/R1.5/plasterboard	R1.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Entry	71	Downlight		Sealed
Kitchen/Living	17	Downlight		Sealed
Bath	2	Downlight		Sealed
Family	13	Downlight		Sealed
Landing (L1)	4	Downlight		Sealed
Bed 1	16	Downlight		Sealed
Ens 1	4	Downlight		Sealed
Bed 2	6	Downlight		Sealed
Bed 3	6	Downlight		Sealed
Bath (Upper)	2	Downlight		Sealed
Study/Landing (Upper)	6	Downlight		Sealed
Living	6	Downlight		Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
as_ROOF-B013.rof #1001 © Concrete slab 200mm - Drained Tile walking surface - no insulation - Susp. Ceiling under		50	Medium
as_ROOF-B013.rof #2016 © Concrete slab 200mm - Drained Tile walking surface - R2.0 insulation under slab - Susp. Ceiling under	R2.0	50	Medium
Metal deck roof: AG foil (sarking): air gap: R4.0: 10mm plasterboard	R4.0	95	Dark

* Refer to glossary.

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

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

Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0007142840

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Property

Address 121 Dove Lane , Warriewood , NSW , 2102

Lot/DP Lot 7 DP 1251955

NatHERS climate zone 56

Accredited assessor

B Carr

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ENQUIRIES@SUSTAINABLETHERMALSOLUTIONS.COM.AU

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Accreditation No. DMN/12/1457

Assessor Accrediting Organisation Design Matters National

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=fqtMRSDUm . 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
0007142821	1	39.41	25.61	65.01	5.1
0007142839	2	39.82	25.80	65.62	5

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).

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