

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0006852602

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Property

Address Trentwood Park , Avalon , NSW , 2107
Lot/DP 1/202857
NCC Class* 1A
Type New Dwelling

Plans

Main Plan Dargaville
Prepared by Stothard Projects

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	219.0	Suburban
Unconditioned*	66.0	NatHERS climate zone
Total	285.0	56
Garage	55.0	



Accredited assessor

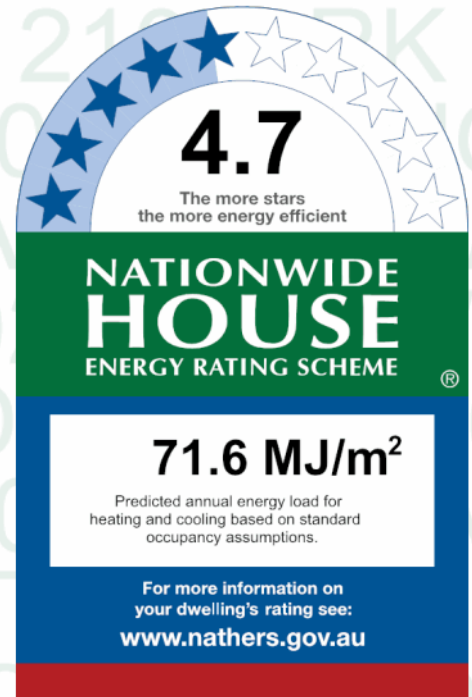
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ABSA
Declaration of interest Declaration completed: no conflicts

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
46.9	24.7
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=TNusTeuKI. 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?

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
No Data Available					

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
WID-001-01 A	WID-001-01 A AI Residential Awning Window SG 3mm Clear	6.5	0.63	0.60	0.66
WID-013-02 A	WID-013-02 A Aluminium Awning Window DG 4/12/4ET	3.4	0.54	0.51	0.57
WID-031-01 A	WID-031-01 A BSW40 Sliding Window DG 4CS_12Ar_4mmClr	3.9	0.49	0.47	0.51
WID-005-16 A	WID-005-16 A AI Residential Internal Sliding Door DG 4/6/4ET	3.7	0.60	0.57	0.63
WID-007-05 A	WID-007-05 A AI Architectural Paragon Entry Door DG 4/6/4	4.3	0.50	0.48	0.53

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Entry	WID-001-01 A	n/a	2700	800	n/a	00	E	No
Hall	WID-013-02 A	n/a	850	2550	n/a	30	N	No
Hall	WID-013-02 A	n/a	1800	850	n/a	00	E	No
Bedroom 3	WID-031-01 A	n/a	1450	3200	n/a	60	E	No
Living	WID-031-01 A	n/a	1450	3200	n/a	60	E	No
Living	WID-001-01 A	n/a	1414	850	n/a	90	S	No
Living	WID-001-01 A	n/a	1414	850	n/a	90	S	No
Bedroom 4	WID-001-01 A	n/a	1414	850	n/a	90	E	No
Bedroom 4	WID-013-02 A	n/a	1414	3000	n/a	30	S	No
Bedroom 1	WID-013-02 A	n/a	1450	600	n/a	90	N	No
Bedroom 1	WID-013-02 A	n/a	1450	600	n/a	90	N	No
Bedroom 1	WID-005-16 A	n/a	2400	2410	n/a	45	S	No
Bedroom 1	WID-013-02 A	n/a	850	3000	n/a	45	W	No
Ensuite	WID-001-01 A	n/a	850	3010	n/a	90	N	No
Kitchen/Living	WID-001-01 A	n/a	850	2550	n/a	90	N	No
Kitchen/Living	WID-005-16 A	n/a	2400	6100	n/a	60	E	No
Kitchen/Living	WID-001-01 A	n/a	1414	2100	n/a	00	E	No
Kitchen/Living	WID-001-01 A	n/a	1414	2100	n/a	30	S	No
Kitchen/Living	WID-001-01 A	n/a	1414	2160	n/a	30	S	No
Upper Hall	WID-007-05 A	n/a	2400	1100	n/a	90	W	No
Bedroom 2	WID-013-02 A	n/a	1450	600	n/a	90	S	No
Bedroom 2	WID-013-02 A	n/a	1450	600	n/a	90	S	No
Bedroom 2	WID-005-16 A	n/a	2400	2410	n/a	45	W	No
Powder	WID-001-01 A	n/a	1414	600	n/a	90	S	No
Scullery	WID-013-02 A	n/a	600	2450	n/a	60	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
No Data Available					

Roof window schedule

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

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 1	2040	5400	90	E
Entry	2700	1200	90	E
Laundry	2040	820	90	N
Living	2040	820	90	S

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Insulated Concrete Formwork	0.50	Medium	No insulation	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-4	Insulated Concrete Formwork	0.50	Medium	No insulation	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage 1	EW-1	3200	995	N	100	NO
Garage 1	EW-2	3200	7095	E	100	NO
Garage 1	EW-1	3200	7500	S	900	NO
Garage 1	EW-1	3200	9300	W	100	NO
Entry	EW-1	3200	6495	N	100	NO
Entry	EW-2	3200	2195	E	100	NO
Laundry	EW-2	2600	1895	N	100	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Laundry	EW-3	2600	1400	S	100	YES
Laundry	EW-3	2600	3500	W	100	NO
Hall	EW-2	2600	1790	N	100	NO
Hall	EW-2	2600	3849	N	100	NO
Hall	EW-2	2600	995	E	100	YES
FF Lift	EW-2	2600	1544	N	100	NO
Bedroom 3	EW-2	2600	1100	N	500	YES
Bedroom 3	EW-2	2600	3495	E	600	NO
Living	EW-2	2600	3595	E	600	NO
Living	EW-2	2600	5095	S	600	YES
Bedroom 4	EW-2	2600	1700	E	100	YES
Bedroom 4	EW-2	2600	3800	S	100	NO
Bedroom 4	EW-3	2600	4595	W	100	NO
Bath	EW-3	2600	1690	W	100	YES
Bedroom 1	EW-2	2600	3895	N	600	NO
Bedroom 1	EW-2	2600	2700	S	6200	YES
Bedroom 1	EW-2	2600	5500	W	600	NO
Ensuite	EW-2	2600	3290	N	600	NO
Kitchen/Living	EW-2	2600	2890	N	600	NO
Kitchen/Living	EW-2	2600	9395	E	4700	NO
Kitchen/Living	EW-2	2600	6895	S	600	NO
SF Lift	EW-2	2600	1395	N	600	NO
SF Lift	EW-4	2600	1695	E	4700	NO
Upper Hall	EW-2	2600	1290	W	3300	YES
Bedroom 2	EW-2	2600	3495	S	600	NO
Bedroom 2	EW-2	2600	4295	W	3300	NO
Powder	EW-2	2600	1690	S	600	NO
Scullery	EW-2	2600	3290	N	600	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1	Cavity wall, direct fix plasterboard, single gap	23.00	Bulk Insulation, No Air Gap R2.5
IW-2	Cavity wall, direct fix plasterboard, single gap	208.00	No insulation
IW-3	Insulated Concreate Formwork	9.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage 1	Waffle pod slab 225 mm 100mm	54.90	None	Waffle Pod 225mm	Bare
Entry	Waffle pod slab 225 mm 100mm	11.40	None	Waffle Pod 225mm	Carpet+Rubber Underlay 18mm
Basement Lift	Waffle pod slab 225 mm 100mm	2.00	None	Waffle Pod 225mm	Bare
Laundry	Suspended Timber Floor 19mm	7.20	Enclosed	Bulk Insulation in Contact with Floor R4	Ceramic Tiles 8mm
Hall/Garage 1	AAC Above Plasterboard 19mm	13.90		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Hall/Entry	AAC Above Plasterboard 19mm	2.70		No Insulation	Carpet+Rubber Underlay 18mm
Hall	Suspended Timber Floor 19mm	2.20	Enclosed	Bulk Insulation in Contact with Floor R4	Carpet+Rubber Underlay 18mm
FF Lift/Basement Lift	AAC Above Plasterboard 19mm	2.10		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Garage 1	AAC Above Plasterboard 19mm	12.80		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Living/Garage 1	AAC Above Plasterboard 19mm	16.70		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Bedroom 4/Garage 1	AAC Above Plasterboard 19mm	5.90		Bulk Insulation R4	Carpet+Rubber Underlay 18mm
Bedroom 4	Suspended Timber Floor 19mm	10.30	Enclosed	Bulk Insulation in Contact with Floor R4	Carpet+Rubber Underlay 18mm
Bath/Garage 1	AAC Above Plasterboard 19mm	2.80		Bulk Insulation R4	Ceramic Tiles 8mm
Bath	Suspended Timber Floor 19mm	2.20	Enclosed	Bulk Insulation in Contact with Floor R4	Ceramic Tiles 8mm
Bedroom 1	Suspended Timber Floor 19mm	27.80	Enclosed	Bulk Insulation in Contact with Floor R4	Carpet+Rubber Underlay 18mm
Ensuite	Suspended Timber Floor 19mm	10.80	Enclosed	Bulk Insulation in Contact with Floor R4	Ceramic Tiles 8mm
Kitchen/Living /Laundry	Timber Above Plasterboard 19mm	5.80		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living /Hall	Timber Above Plasterboard 19mm	10.10		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living /Bedroom 4	Timber Above Plasterboard 19mm	16.30		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living /Bath	Timber Above Plasterboard 19mm	5.30		No Insulation	Carpet+Rubber Underlay 18mm
Kitchen/Living	Suspended Timber Floor 19mm	33.60	Enclosed	Bulk Insulation in Contact with Floor R4	60/40 Carpet 10mm/Ceramic
SF Lift/FF Lift	Timber Above Plasterboard 19mm	2.10		No Insulation	Carpet+Rubber Underlay 18mm
Upper Hall	Suspended Timber Floor 19mm	9.10	Enclosed	Bulk Insulation in Contact with Floor R4	Carpet+Rubber Underlay 18mm
Bedroom 2	Suspended Timber Floor 19mm	14.70	Enclosed	Bulk Insulation in Contact with Floor R4	Carpet+Rubber Underlay 18mm
Powder	Suspended Timber Floor 19mm	3.90	Enclosed	Bulk Insulation in Contact with Floor R4	Ceramic Tiles 8mm
Scullery/Laundry	Timber Above Plasterboard 19mm	1.50		No Insulation	Ceramic Tiles 8mm
Scullery	Suspended Timber Floor 19mm	4.10	Enclosed	Bulk Insulation in Contact with Floor R4	Ceramic Tiles 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage 1	Plasterboard	No insulation	No
Garage 1	AAC Above Plasterboard	Bulk Insulation R4	No
Entry	Plasterboard	Bulk Insulation R5	No
Entry	AAC Above Plasterboard	No Insulation	No
Basement Lift	AAC Above Plasterboard	No Insulation	No
Laundry	Timber Above Plasterboard	No Insulation	No
Hall	Plasterboard	Bulk Insulation R5	No
Hall	Timber Above Plasterboard	No Insulation	No
FF Lift	Timber Above Plasterboard	No Insulation	No
Bedroom 3	Plasterboard	Bulk Insulation R5	No
Living	Plasterboard	Bulk Insulation R5	No
Bedroom 4	Timber Above Plasterboard	No Insulation	No
Bath	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R5	No
Ensuite	Plasterboard	Bulk Insulation R5	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
SF Lift	Plasterboard	Bulk Insulation R5	No
Upper Hall	Plasterboard	Bulk Insulation R5	No
Bedroom 2	Plasterboard	Bulk Insulation R5	No
Powder	Plasterboard	Bulk Insulation R5	No
Scullery	Plasterboard	Bulk Insulation R5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
Bath	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
Corrugated Iron	No Insulation, Only an Air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above 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).