Nationwide House Energy Rating Scheme
NatHERS Certificate No. 7CKJPQL880-07

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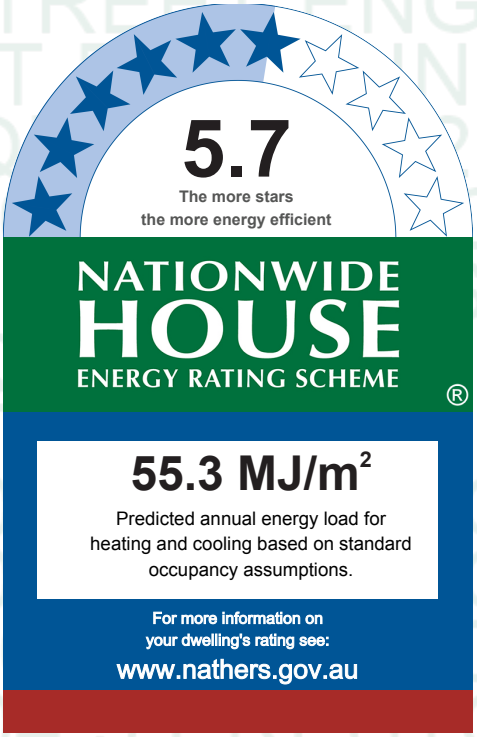

Property

Address	G04, 5 Preston Street, Engadine, NSW, 2233
Lot/DP	6/232490
NCC Class*	Class 2
Type	New Home

Plans

Main plan	21_010 CC4 01/06/2023
Prepared by	Smith & Tzannes

Construction and environment

Assessed floor area (m²)*		**Exposure type**
Conditioned*	81.9	suburban
Unconditioned*	0	**NatHERS climate zone**
Total	81.9	56 Mascot AMO
Garage	-	

Thermal performance

Heating	Cooling
38.5	**16.8**
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.

Accredited assessor

Name	Dimitrios Harakidas
Business name	AENEC
Email	info@aenec.com.au
Phone	0416316204
Accreditation No.	HERA10042
Assessor Accrediting Organisation	HERA
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=7CKJPQL880-07 When using either link, ensure you are visiting www.FR5.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

All openable windows other than located on ground floor are calculated to have a lockable device (opening restriction) in place. A single window type has been nominated throughout the building. North pointer shown on drawings has been assumed to be the True North. No trees have been modelled. If these are not in place then this Nathers must be revised.

Window and glazed door *type and performance*

Default* windows

				Substitution tolerance ranges	
Window ID	**Window description**	**Maximum U-value***	**SHGC***	SHGC lower limit	SHGC upper limit
PVC-006-01 W	uPVC B DG Argon Fill Clear-Clear	2.6	0.53	0.5	0.56

Custom* windows

				Substitution tolerance ranges	
Window ID	**Window description**	**Maximum U-value***	**SHGC***	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*
COMMON CORRIDOR	PVC-006-01 W	A0.21	2950	400	fixed	0.0	SE	No

* Refer to glossary.

COMMON CORRIDOR	PVC-006-01 W	A0.21	2950	1120	casement	100.0	SE	No
COMMON CORRIDOR	PVC-006-01 W	a0.00	2850	700	fixed	0.0	NE	No
COMMON CORRIDOR	PVC-006-01 W	a0.00	2850	1165	casement	100.0	NE	No
COMMON CORRIDOR	PVC-006-01 W	a0.00	2850	600	fixed	0.0	NE	No
Bedroom 1	PVC-006-01 W	A0.13	2850	2650	sliding	45.0	SW	No
Bedroom 2	PVC-006-01 W	A0.13	2850	2650	sliding	45.0	SW	No
Kitchen/Living	PVC-006-01 W	A0.11	2850	3760	sliding	60.0	NW	No
Kitchen/Living	PVC-006-01 W	A0.1	2850	6070	sliding	45.0	SW	No

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Area (m²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
COMMON CORRIDOR	2040	920	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*

* Refer to glossary.

1	FR5 - Earth Retaining Wall	0.5	Medium		No
2	HEBEL INTERTENANCY	0.5	Medium	Glass fibre batt: R1.0 (R1.0)	No
3	HEBEL INTERTENANCY	0.5	Medium	Glass fibre batt: R1.5 (R1.5)	No
4	AENEC - 200mmConcrete + furring channel	0.5	Medium		No
5	HEBEL EXT WALL	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No
6	AENEC - 250mm concrete wall	0.5	Medium		No
7	HEBEL AND CONCRETE	0.5	Medium		No
8	HEBEL INTERTENANCY	0.5	Medium		No
9	HEBEL INTERTENANCY	0.5	Medium	Glass fibre batt: R1.5 (R1.5)	No
10	HEBEL INTERTENANCY	0.5	Medium		No
11	HEBEL INTERTENANCY	0.5	Medium	Glass fibre batt: R1.5 (R1.5);Glass fibre batt: R1.5 (R1.5)	No
12	AENEC - 200mmConcrete + furring channel	0.5	Medium	Glass fibre batt: R1.5 (R1.5)	No
13	HEBEL EXT WALL	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	No
14	HEBEL AND CONCRETE	0.5	Medium		No
15	HEBEL AND CONCRETE	0.5	Medium		No
16	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
CARPARK	1	3070	20496	NW	0	No
CARPARK	1	3070	43143	SW	0	No
CARPARK	1	3070	11731	SE	0	No
CARPARK	1	3070	10156	SW	0	No
CARPARK	1	3070	1440	NW	0	No
CARPARK	1	3070	6275	SW	0	No
CARPARK	1	3070	1423	SE	0	No
CARPARK	1	3070	19080	SW	0	No
CARPARK	1	3070	17835	SE	0	No
CARPARK	1	3070	31851	NE	0	No
CARPARK	1	3070	1990	SE	0	No
CARPARK	1	3070	24640	NE	0	No
CARPARK	1	3070	5433	NW	0	No
CARPARK	1	3070	2649	NE	0	No
CARPARK	1	3070	5640	NW	0	No
CARPARK	1	3070	1930	NE	0	No
CARPARK	1	3070	283	N	0	No
CARPARK	1	3070	12193	NE	0	No
CARPARK	1	3070	212	SE	0	No
CARPARK	1	3070	5206	NE	0	No

* Refer to glossary.

COMMON CORRIDOR	2	2620	1561	NW	0	No
COMMON CORRIDOR	3	2620	234	SW	0	No
COMMON CORRIDOR	4	2620	4828	SW	0	No
COMMON CORRIDOR	5	2620	1098	SW	8756	Yes
COMMON CORRIDOR	2	2620	4876	SW	0	No
COMMON CORRIDOR	6	2620	1515	SW	0	No
COMMON CORRIDOR	3	2620	188	NW	0	No
COMMON CORRIDOR	2	2620	3319	SW	0	No
COMMON CORRIDOR	2	2620	490	NW	0	No
COMMON CORRIDOR	2	2620	1738	SW	0	No
COMMON CORRIDOR	3	2620	685	SE	0	No
COMMON CORRIDOR	7	2620	908	SW	0	No
COMMON CORRIDOR	8	2620	1999	SW	0	No
COMMON CORRIDOR	2	2620	4621	SW	0	No
COMMON CORRIDOR	5	2950	1559	SE	3385	Yes
COMMON CORRIDOR	9	2620	6668	NE	0	No
COMMON CORRIDOR	10	2620	2935	NE	0	No
COMMON CORRIDOR	10	2620	1366	SE	0	No
COMMON CORRIDOR	6	2620	7269	SE	0	No
COMMON CORRIDOR	5	2620	2978	NE	8822	Yes
COMMON CORRIDOR	2	2620	8644	NW	0	No
COMMON CORRIDOR	3	2620	10010	NE	0	No
COMMON CORRIDOR	10	2620	509	SE	0	No
COMMON CORRIDOR	2	2620	1388	NE	0	No
COMMON CORRIDOR	2	2620	510	NW	0	No
COMMON CORRIDOR	3	2620	2266	NE	0	No
BA	11	2400	1566	NE	0	No
ENS	5	2400	1635	SE	1273	Yes
ENS	12	2400	2668	NE	0	No
Bedroom 1	5	2850	4453	SW	1257	Yes
Bedroom 1	6	2850	857	SE	1300	Yes
Bedroom 1	13	2850	2167	SE	1254	Yes
Bedroom 1	12	2720	1735	NE	0	No
Bedroom 2	14	2850	593	SW	1254	Yes
Bedroom 2	14	2850	252	NW	0	Yes
Bedroom 2	5	2850	3016	SW	1254	Yes
ENTRY - CORRIDOR	6	2720	2612	SE	0	No
ENTRY - CORRIDOR	3	2720	537	NW	0	No
ENTRY - CORRIDOR	11	2720	856	NE	0	No
Kitchen/Living	12	2720	2901	NE	0	No
Kitchen/Living	11	2720	2634	NW	0	No

Kitchen/Living	11	2720	4219	NE	0	No
Kitchen/Living	5	2850	3928	NW	2661	Yes
Kitchen/Living	15	2850	1083	SW	1254	Yes
Kitchen/Living	15	2850	186	NW	0	No
Kitchen/Living	5	2850	6041	SW	1245	Yes
Kitchen/Living	16	2720	261	SE	0	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	27	Glass fibre batt: R1.5 (R1.5)
2	FR5 - Internal Plasterboard Stud Wall	34.2	
3	HEBEL INTERTENANCY	3	Glass fibre batt: R1.5 (R1.5)

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
CARPARK	FR5 - CSOG: Slab on Ground	1779	Enclosed	R0.0	none
COMMON CORRIDOR	FR5 - 400mm concrete slab	69.1	Enclosed	R1.0	Carpet
BA	FR5 - 400mm concrete slab	4.1	Enclosed	R1.0	Tiles
ENS	FR5 - 400mm concrete slab	4.4	Enclosed	R1.0	Tiles
Bedroom 1	FR5 - 400mm concrete slab	16.5	Enclosed	R1.0	Carpet
Bedroom 2	FR5 - 400mm concrete slab	10.4	Enclosed	R1.0	Carpet
ENTRY - CORRIDOR	FR5 - 400mm concrete slab	9.8	Enclosed	R1.0	Vinyl
Kitchen/Living	FR5 - 400mm concrete slab	36.7	Enclosed	R1.0	Vinyl

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
CARPARK	FR5 - 400mm concrete slab	R1.0	No
CARPARK	Plasterboard	R0.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
COMMON CORRIDOR	16	Downlights	80	Sealed
BA	1	Exhaust Fans	200	Sealed
BA	1	Downlights	80	Sealed
ENS	1	Exhaust Fans	200	Sealed
ENS	1	Downlights	80	Sealed
Bedroom 1	4	Downlights	80	Sealed
Bedroom 2	4	Downlights	80	Sealed
ENTRY - CORRIDOR	1	Exhaust Fans	200	Sealed
ENTRY - CORRIDOR	1	Downlights	80	Sealed

* Refer to glossary.

Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	9	Downlights	80	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	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 NatHERSAdministrator. 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).