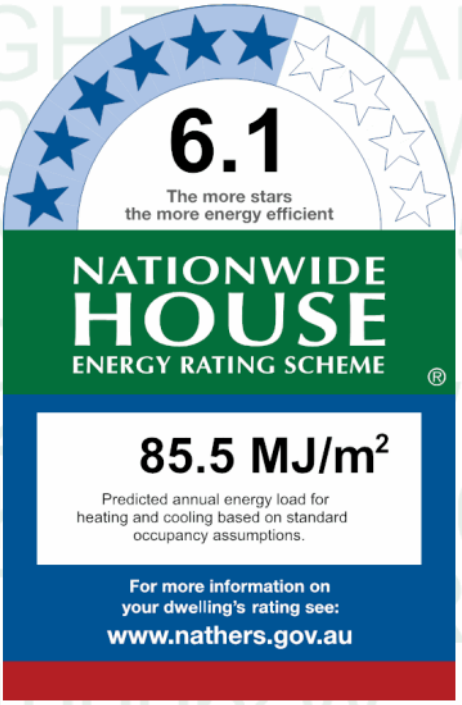
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006445035

Generated on 08 Sep 2021 using BERS Pro v4.4.0.6 (3.21)



Property

Address	Unit DA, 4 Inkerman Rod , Emu Heights , NSW , 2750
Lot/DP	30/16478
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Pirovic Pinch A009923 Dwelling A
Prepared by	SM

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	172.0	Suburban
Unconditioned*	33.0	**NatHERS climate zone**
Total	205.0	28
Garage	21.0	

Thermal performance

Heating	**Cooling**
54.0 MJ/m^2	**31.5** MJ/m^2

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	Ian Fry
Business name	Frys Energywise
Email	comply@frysenergywise.com.au
Phone	02 9899 2825
Accreditation No.	DMN/12/1441

Assessor Accrediting Organisation

Design Matters National

Declaration of interest Declaration completed: no conflicts

Verification

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

National Construction Code (NCC) requirements

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

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

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

* 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?

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

Where not noted on plans, default selections to floor coverings and external colours have been used in this assessment, as noted in the NatHERS Technical Notes. Alternative selections past this point can be made to floor coverings and external colours, without requiring an amended certificate.

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
STG-002-01 A	STG-002-01 A Aluminium Awning Window SG 3Clr	6.5	0.65	0.62	0.68
STG-007-01 A	STG-007-01 A Aluminium Sliding Window SG 3Clr	6.3	0.73	0.69	0.77
STG-005-02 A	STG-005-02 A Aluminium Sliding Door SG 5Clr	6.3	0.72	0.68	0.76

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Lounge/Entry	STG-002-01 A	n/a	1800	610	n/a	90	E	No
Lounge/Entry	STG-007-01 A	n/a	1800	1200	n/a	30	S	No
Powder	STG-007-01 A	n/a	1300	600	n/a	45	S	No
Laundry	STG-007-01 A	n/a	1300	600	n/a	45	S	No
Kitchen/Family	STG-007-01 A	n/a	1800	2290	n/a	30	S	No
Kitchen/Family	STG-007-01 A	n/a	1800	2290	n/a	30	S	No
Kitchen/Family	STG-005-02 A	n/a	2143	4210	n/a	60	W	No
Bed 2	STG-007-01 A	n/a	900	2100	n/a	45	W	No
Bed 2	STG-007-01 A	n/a	600	2100	n/a	45	S	No
Bath	STG-007-01 A	n/a	900	700	n/a	45	W	No
Media	STG-007-01 A	n/a	600	2400	n/a	40	S	No
Bed 1	STG-005-02 A	n/a	2100	2100	n/a	45	E	No
Bed 1	STG-007-01 A	n/a	600	1800	n/a	45	S	No
Bed 3	STG-007-01 A	n/a	700	2100	n/a	45	S	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	

* 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
Garage	2229	2410	90	E
Lounge/Entry	2340	920	90	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Single Skin Brick	0.30	Light	No insulation	No
EW-2	Brick Veneer	0.30	Light	No insulation	No
EW-3	Brick Veneer	0.30	Light	Anti-glare foil with bulk no gap R2.5	No
EW-4	Brick Veneer	0.30	Light	Anti-glare foil with bulk no gap R2.5	No
EW-5	Fibro Cavity Panel Direct Fix	0.30	Light	Anti-glare foil with bulk no gap R2.5	No
EW-6	Fibro Cavity Panel Direct FixZ:15W2:2	0.30	Light	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)
Garage	EW-1	3790	3500	E	2200	NO
Garage	EW-2	3790	1100	S	2100	YES
Lounge/Entry	EW-3	3290	1495	E	2100	YES
Lounge/Entry	EW-3	3290	1300	S	600	YES
Lounge/Entry	EW-3	3290	1100	E	3400	YES
Lounge/Entry	EW-3	3290	4195	S	600	NO
Powder	EW-3	2450	1890	S	600	YES
Laundry	EW-3	2450	600	E	6700	YES
Laundry	EW-3	2450	1795	S	600	NO
Kitchen/Family	EW-3	2450	7695	S	600	NO
Kitchen/Family	EW-3	2450	800	W	600	NO
Kitchen/Family	EW-4	2451	5900	W	3400	NO
Bed 2	EW-5	2450	3695	W	700	NO
Bed 2	EW-5	2450	4995	S	700	NO
Bath	EW-5	2450	2095	W	700	NO
Media	EW-5	2450	3995	S	700	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed 1	EW-5	2450	3500	E	1900	NO
Bed 1	EW-4	935	1100	S	0	NO
Bed 1	EW-6	1515	1100	S	700	NO
Bed 1	EW-5	2450	5695	S	700	NO
Bed 3	EW-5	2450	2295	E	700	YES
Bed 3	EW-5	2450	4295	S	700	NO
WIR Bed 2	EW-5	2450	2290	S	700	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Shaft liner party wall with plaster		107.00	Bulk Insulation both sides of shaft liner R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		27.00	Bulk Insulation, No Air Gap R2.5
IW-3 - Cavity wall, direct fix plasterboard, single gap		152.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	Waffle pod slab 175 mm 100mm	21.00	None	Waffle Pod 175mm	Bare
Lounge/Entry	Waffle pod slab 225 mm 100mm	14.10	None	Waffle Pod 225mm	Cork Tiles or Parquetry 8mm
Powder	Waffle pod slab 225 mm 100mm	2.60	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Laundry	Waffle pod slab 225 mm 100mm	4.10	None	Waffle Pod 225mm	Ceramic Tiles 8mm
Kitchen/Family	Waffle pod slab 225 mm 100mm	53.50	None	Waffle Pod 225mm	Cork Tiles or Parquetry 8mm
Pantry	Waffle pod slab 225 mm 100mm	2.20	None	Waffle Pod 225mm	Cork Tiles or Parquetry 8mm
Hallway	Waffle pod slab 225 mm 100mm	11.10	None	Waffle Pod 225mm	Cork Tiles or Parquetry 8mm
Bed 2/Kitchen/Family	Timber Above Plasterboard 19mm	6.20		No Insulation	Carpet+Rubber Underlay 18mm
Bed 2	Suspended Timber Floor 19mm	11.90	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Bath	Suspended Timber Floor 19mm	5.50	Totally Open	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
WC/Kitchen/Family	Timber Above Plasterboard 19mm	1.30		No Insulation	Ceramic Tiles 8mm
Linen/Kitchen/Family	Timber Above Plasterboard 19mm	2.40		No Insulation	Carpet+Rubber Underlay 18mm
Media/Garage	Timber Above Plasterboard 19mm	0.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Media/Kitchen/Family	Timber Above Plasterboard 19mm	11.30		No Insulation	Carpet+Rubber Underlay 18mm
Media/Pantry	Timber Above Plasterboard 19mm	2.40		No Insulation	Carpet+Rubber Underlay 18mm
Media/Hallway	Timber Above Plasterboard 19mm	8.30		No Insulation	Carpet+Rubber Underlay 18mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite/Garage	Timber Above Plasterboard 19mm	4.20		Bulk Insulation R2.5	Ceramic Tiles 8mm
WIR Bed 1/Garage	Timber Above Plasterboard 19mm	4.40		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bed 1/Garage	Timber Above Plasterboard 19mm	11.40		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bed 1/Lounge/Entry	Timber Above Plasterboard 19mm	1.30		No Insulation	Carpet+Rubber Underlay 18mm
Bed 1	Suspended Timber Floor 19mm	3.80	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Bed 3/Laundry	Timber Above Plasterboard 19mm	0.90		No Insulation	Carpet+Rubber Underlay 18mm
Bed 3/Kitchen/Family	Timber Above Plasterboard 19mm	11.80		No Insulation	Carpet+Rubber Underlay 18mm
WIR Bed 2/Kitchen/Family	Timber Above Plasterboard 19mm	8.10		No Insulation	Carpet+Rubber Underlay 18mm
Passage/Kitchen/Family	Timber Above Plasterboard 19mm	4.00		No Insulation	Carpet+Rubber Underlay 18mm
Passage	Suspended Timber Floor 19mm	0.80	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Timber Above Plasterboard	Bulk Insulation R2.5	No
Lounge/Entry	Plasterboard	Bulk Insulation R4.1	No
Lounge/Entry	Timber Above Plasterboard	No Insulation	No
Powder	Plasterboard	Bulk Insulation R4.1	No
Laundry	Plasterboard	Bulk Insulation R4.1	No
Laundry	Timber Above Plasterboard	No Insulation	No
Kitchen/Family	Plasterboard	Bulk Insulation R4.1	No
Kitchen/Family	Timber Above Plasterboard	No Insulation	No
Pantry	Timber Above Plasterboard	No Insulation	No
Hallway	Plasterboard	Bulk Insulation R4.1	No
Hallway	Timber Above Plasterboard	No Insulation	No
Bed 2	Plasterboard	Bulk Insulation R4.1	No
Bath	Plasterboard	Bulk Insulation R4.1	No
WC	Plasterboard	Bulk Insulation R4.1	No
Linen	Plasterboard	Bulk Insulation R4.1	No
Media	Plasterboard	Bulk Insulation R4.1	No
Ensuite	Plasterboard	Bulk Insulation R4.1	No
WIR Bed 1	Plasterboard	Bulk Insulation R4.1	No
Bed 1	Plasterboard	Bulk Insulation R4.1	No
Bed 3	Plasterboard	Bulk Insulation R4.1	No
WIR Bed 2	Plasterboard	Bulk Insulation R4.1	No
Passage	Plasterboard	Bulk Insulation R4.1	No

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Powder	1	Exhaust Fans	300	Sealed
Bath	1	Exhaust Fans	300	Sealed
WC	1	Exhaust Fans	300	Sealed
Ensuite	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
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	Dark
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.85	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).

* Refer to glossary.