Nationwide House Energy Rating Scheme — Class 2 summary
NatHERS Certificate No. 0008729800

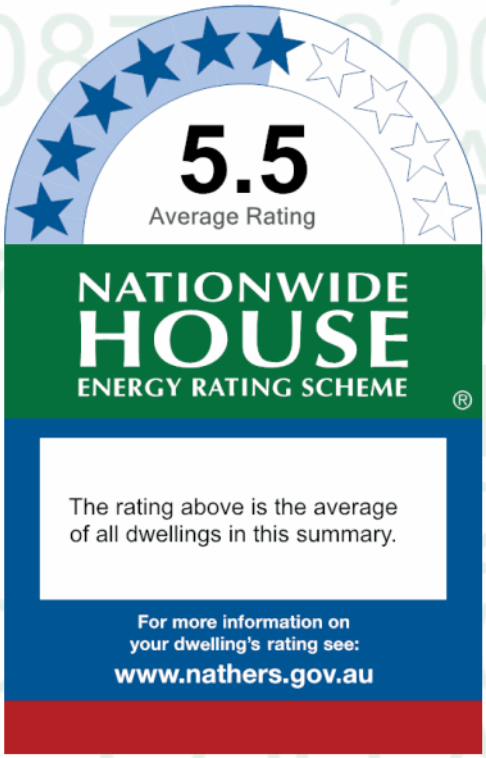
Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)

Property

Address 37-43 Hay Street , Collaroy , NSW , 2097

Lot/DP 10648

NatHERS climate zone 56



Accredited assessor

Ian Fry
Frys Energywise
comply@frysenergywise.com.au
02 9899 2825

Accreditation No. DMN/12/1441

Assessor Accrediting Organisation Design Matters National

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=SIHOlNJFx . 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
0008729691	1	42.6	26.7	69.4	4.8
0008729733	2	44.2	11.9	56.1	5.6
0008729766	3	41.9	25.2	67.1	4.9
0008729709	4	40.5	14.1	54.6	5.7
0008729741	5	37.3	17	54.3	5.8

National Construction Code (NCC) requirements

Continued Over

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.

Summary of all dwellings (continued)

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
0008729758	6	41	17.8	58.8	5.4
0008729717	7	24.3	19.8	44.1	6.6
0008729725	8	32.6	23.7	56.3	5.6
0008729774-01	9	39.4	25.5	64.9	5.1
0008729790	10	45	20.9	65.9	5
0008729782	11	28.8	24.1	52.9	5.9
Average		37.96	20.61	58.58	5.49

* Refer to glossary.

Explanatory notes

About this report

This summary rating is the average rating of all NCC Class 2 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).

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). 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.

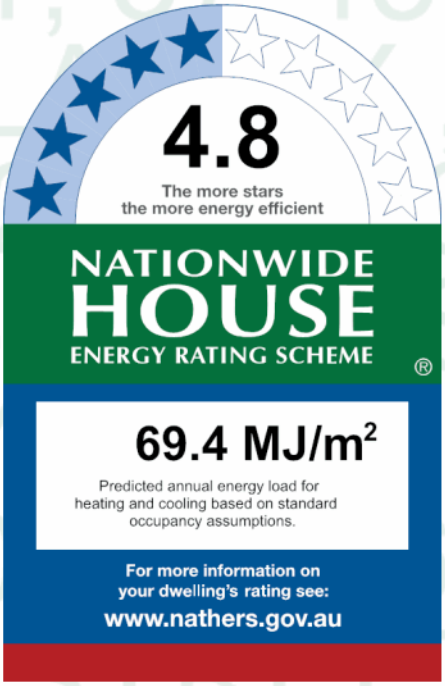
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729691

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 1, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	195.0	Suburban
Unconditioned*	2.0	**NatHERS climate zone**
Total	197.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
42.6 MJ/m^2	26.7 MJ/m^2

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

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.

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.

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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-12 A	BRD-033-12 A ESS Sliding Door (80mm) SG 6SP50	4.2	0.31	0.29	0.33
BRD-112-01 A	BRD-112-01 A ESS Awning 52 SG 4mmClr	6.5	0.67	0.64	0.70

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/Din/Liv	BRD-033-12 A	n/a	1000	4945	n/a	90	N	No
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	E	No
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	E	No
Flexi	BRD-033-12 A	n/a	2800	3290	n/a	45	N	No
Flexi	BRD-112-01 A	n/a	2800	900	n/a	60	E	No
Bedroom 1	BRD-033-12 A	n/a	2800	4945	n/a	60	N	No
Bedroom 1	BRD-033-12 A	n/a	2800	2900	n/a	45	E	No
Bedroom 2	BRD-033-12 A	n/a	2800	3015	n/a	45	E	No
Bedroom 3	BRD-033-12 A	n/a	2800	3300	n/a	45	N	No
Bedroom 3	BRD-112-01 A	n/a	2800	900	n/a	10	E	No
WIR	BRD-112-01 A	n/a	1800	960	n/a	10	E	No
Ensuite	BRD-112-01 A	n/a	1800	600	n/a	10	E	No
Entry Void	BRD-063-01 A	n/a	2800	1700	n/a	00	N	Yes

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ensuite	VEL-012-01 W	n/a	0	780	780	S	No	No
Bathroom	VEL-012-01 W	n/a	0	780	780	SW	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kit/Din/Liv	2800	1100	90	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2800	8895	W	100	NO
Kit/Din/Liv	EW-1	2800	6900	N	1400	NO
Kit/Din/Liv	EW-1	2800	9500	E	100	YES
GF Lift	EW-1	2800	595	W	100	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bathroom	EW-1	2800	400	E	300	YES
Bathroom	EW-1	2800	2100	S	19900	NO
Flexi	EW-1	2800	3895	N	2500	YES
Flexi	EW-1	2800	3700	E	100	NO
Flexi	EW-1	2800	3895	S	100	YES
Bedroom 1	EW-1	2800	5095	N	1800	NO
Bedroom 1	EW-1	2800	3795	E	700	NO
Bedroom 2	EW-1	2800	3400	E	1200	YES
Bedroom 2	EW-1	2800	2200	S	100	NO
Bedroom 3	EW-1	2800	3895	N	700	YES
Bedroom 3	EW-1	2800	3200	E	100	NO
Bedroom 3	EW-1	2800	3595	S	100	YES
WIR	EW-1	2800	2190	E	700	NO
Ensuite	EW-1	2800	995	E	4000	YES
FF Lift	EW-1	2800	595	W	0	NO
Entry Void	EW-1	2800	2595	W	100	NO
Entry Void	EW-1	2800	1795	N	1800	NO
Corridor	EW-1	2800	6390	W	100	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		188.00	No insulation
IW-2 - Cavity brick, plasterboard		50.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Din/Liv	Suspended Concrete Slab 150mm	75.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
GF Lift	Suspended Concrete Slab 150mm	2.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	Suspended Concrete Slab 150mm	4.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Prep	Suspended Concrete Slab 150mm	4.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	5.90	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Flexi	Suspended Concrete Slab 150mm	14.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bedroom 1/Kit/Din/Liv	Timber Above Plasterboard 19mm	26.00		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Kit/Din/Liv	Timber Above Plasterboard 19mm	6.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Prep	Timber Above Plasterboard 19mm	1.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Bathroom	Timber Above Plasterboard 19mm	6.10		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Flexi	Timber Above Plasterboard 19mm	1.00		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kit/Din/Liv	Timber Above Plasterboard 19mm	5.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Flexi	Timber Above Plasterboard 19mm	2.50		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Timber Floor 19mm	9.50	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Kit/Din/Liv	Timber Above Plasterboard 19mm	7.90		No Insulation	Cork Tiles or Parquetry 8mm
Ensuite/Kit/Din/Liv	Timber Above Plasterboard 19mm	9.00		No Insulation	Ceramic Tiles 8mm
Bathroom/Laundry	Timber Above Plasterboard 19mm	4.20		No Insulation	Ceramic Tiles 8mm
Bathroom/Prep	Timber Above Plasterboard 19mm	1.50		No Insulation	Ceramic Tiles 8mm
FF Lift/GF Lift	Timber Above Plasterboard 19mm	2.10		No Insulation	Bare
Entry Void/Kit/Din/Liv	Timber Above Plasterboard 19mm	4.50		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Kit/Din/Liv	Timber Above Plasterboard 19mm	13.50		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Prep	Timber Above Plasterboard 19mm	1.60		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Timber Above Plasterboard	No Insulation	No
GF Lift	Plasterboard	Bulk Insulation R4	No
GF Lift	Timber Above Plasterboard	No Insulation	No
Laundry	Plasterboard	Bulk Insulation R4	No
Laundry	Timber Above Plasterboard	No Insulation	No
Prep	Plasterboard	Bulk Insulation R4	No
Prep	Timber Above Plasterboard	No Insulation	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Bathroom	Timber Above Plasterboard	No Insulation	No
Flexi	Plasterboard	Bulk Insulation R4	No
Flexi	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
FF Lift	Plasterboard	Bulk Insulation R4	No
Entry Void	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Chimneys	350	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	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

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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
NatHERS Certificate No. 0008729733

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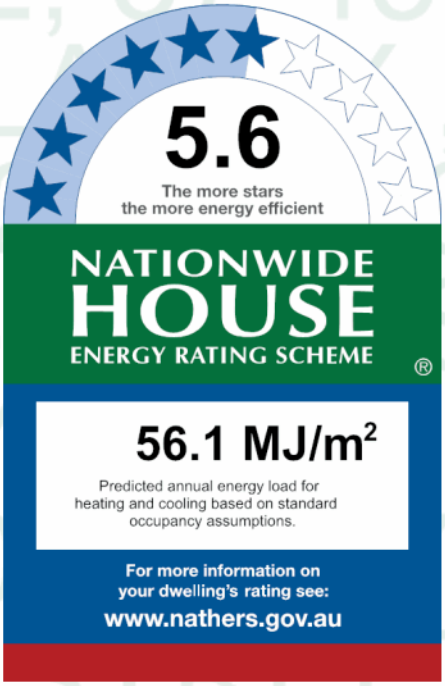

Property

Address	Unit 2, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	195.0	Suburban
Unconditioned*	2.0	**NatHERS climate zone**
Total	197.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
44.2	**11.9**
MJ/m^2	MJ/m^2

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

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.

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.

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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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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.

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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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-112-01 A	BRD-112-01 A ESS Awning 52 SG 4mmClr	6.5	0.67	0.64	0.70

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-12 A	BRD-033-12 A ESS Sliding Door (80mm) SG 6SP50	4.2	0.31	0.29	0.33
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/Din/Liv	BRD-112-01 A	n/a	2800	1688	n/a	60	N	No
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	E	No
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	E	No
Flexi	BRD-033-12 A	n/a	2800	2700	n/a	45	N	No
Bedroom 1	BRD-033-12 A	n/a	2800	4945	n/a	60	N	No
Bedroom 1	BRD-033-12 A	n/a	2800	2900	n/a	45	E	No
Bedroom 3	BRD-033-12 A	n/a	2800	2700	n/a	45	N	No
Bedroom 2	BRD-112-01 A	n/a	2800	1065	n/a	10	E	No
Ensuite	BRD-112-01 A	n/a	1000	2500	n/a	10	E	No
Entry Void	BRD-063-01 A	n/a	2800	1700	n/a	00	N	Yes

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

* Refer to glossary.

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Bathroom	VEL-012-01 W	n/a	0	780	780	SW	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kit/Din/Liv	2800	1100	90	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2800	6800	N	1900	NO
Kit/Din/Liv	EW-1	2800	9800	E	800	YES
Flexi	EW-1	2800	3995	N	1200	YES
Bedroom 1	EW-1	2800	4995	N	800	NO
Bedroom 1	EW-1	2800	3795	E	100	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 3	EW-1	2800	3995	N	1100	YES
Bedroom 2	EW-1	2800	1300	E	11325	YES
WIR	EW-1	2800	2195	E	100	NO
Ensuite	EW-1	2800	2495	E	100	NO
Entry Void	EW-1	2800	1795	N	800	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		158.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		188.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Din/Liv	Suspended Concrete Slab 150mm	74.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
GF Lift	Suspended Concrete Slab 150mm	2.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	4.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Prep	Suspended Concrete Slab 150mm	4.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	5.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Flexi	Suspended Concrete Slab 150mm	15.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bedroom 1/Kit/Din/Liv	Timber Above Plasterboard 19mm	25.60		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Prep	Timber Above Plasterboard 19mm	0.90		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Bathroom	Timber Above Plasterboard 19mm	4.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Flexi	Timber Above Plasterboard 19mm	14.90		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Kit/Din/Liv	Timber Above Plasterboard 19mm	10.70		No Insulation	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2/Bathroom	Timber Above Plasterboard 19mm	1.80		No Insulation	Cork Tiles or Parquetry 8mm
WIR/Kit/Din/Liv	Timber Above Plasterboard 19mm	7.70		No Insulation	Cork Tiles or Parquetry 8mm
Ensuite/Kit/Din/Liv	Timber Above Plasterboard 19mm	8.80		No Insulation	Ceramic Tiles 8mm
Bathroom/Laundry	Timber Above Plasterboard 19mm	4.10		No Insulation	Ceramic Tiles 8mm
FF Lift/GF Lift	Timber Above Plasterboard 19mm	2.10		No Insulation	Bare
Entry Void/Kit/Din/Liv	Timber Above Plasterboard 19mm	4.50		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Kit/Din/Liv	Timber Above Plasterboard 19mm	13.60		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Prep	Timber Above Plasterboard 19mm	3.10		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Timber Above Plasterboard	No Insulation	No
GF Lift	Plasterboard	Bulk Insulation R4	No
GF Lift	Timber Above Plasterboard	No Insulation	No
Laundry	Plasterboard	Bulk Insulation R4	No
Laundry	Timber Above Plasterboard	No Insulation	No
Prep	Plasterboard	Bulk Insulation R4	No
Prep	Timber Above Plasterboard	No Insulation	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Bathroom	Timber Above Plasterboard	No Insulation	No
Flexi	Plasterboard	Bulk Insulation R4	No
Flexi	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
FF Lift	Plasterboard	Bulk Insulation R4	No
Entry Void	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Chimneys	350	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	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	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.

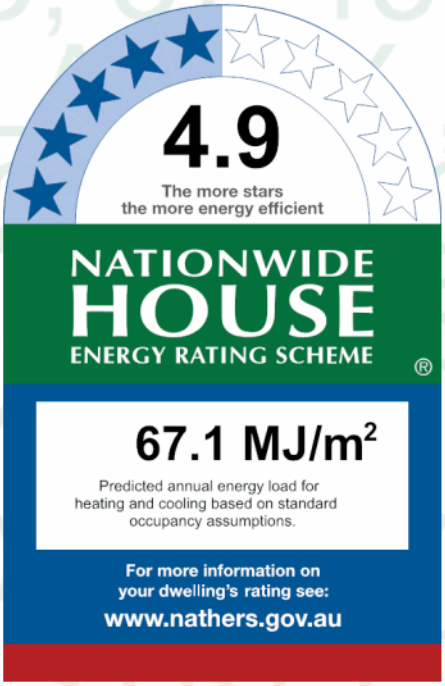
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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 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
NatHERS Certificate No. 0008729766

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 3, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	195.0	Suburban
Unconditioned*	2.0	**NatHERS climate zone**
Total	197.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
41.9	**25.2**
MJ/m^2	MJ/m^2

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

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=RciuARiZL.
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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".

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I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-12 A	BRD-033-12 A ESS Sliding Door (80mm) SG 6SP50	4.2	0.31	0.29	0.33

* Refer to glossary.
Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21) for Unit 3, 37-43 Hay Street , Collaroy , NSW , 2097

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-112-01 A	BRD-112-01 A ESS Awning 52 SG 4mmClr	6.5	0.67	0.64	0.70
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	W	No
Kit/Din/Liv	BRD-033-12 A	n/a	2800	4340	n/a	60	W	No
Kit/Din/Liv	BRD-112-01 A	n/a	2800	1688	n/a	60	N	No
Flexi	BRD-033-12 A	n/a	2800	3290	n/a	45	N	No
Bedroom 1	BRD-112-01 A	n/a	2800	1497	n/a	10	W	No
Bedroom 1	BRD-033-12 A	n/a	2800	4945	n/a	60	N	No
Bedroom 2	BRD-033-12 A	n/a	2800	3015	n/a	45	W	No
Bedroom 3	BRD-112-01 A	n/a	2800	900	n/a	10	W	No
Bedroom 3	BRD-033-12 A	n/a	2800	3300	n/a	45	N	No
WIR	BRD-112-01 A	n/a	1800	960	n/a	10	W	No
Ensuite	BRD-112-01 A	n/a	1800	600	n/a	10	W	No
Entry Void	BRD-063-01 A	n/a	2800	1700	n/a	00	N	Yes

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

* Refer to glossary.
Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21) for Unit 3, 37-43 Hay Street , Collaroy , NSW , 2097

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Bathroom	VEL-012-01 W	n/a	0	780	780	NE	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kit/Din/Liv	2800	1100	90	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2800	9500	W	100	YES
Kit/Din/Liv	EW-1	2800	6900	N	1400	NO
Bathroom	EW-1	2800	1800	S	0	NO
Bathroom	EW-1	2800	400	W	300	YES
Flexi	EW-1	2800	3895	S	100	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Flexi	EW-1	2800	3700	W	100	NO
Flexi	EW-1	2800	3895	N	2500	YES
Bedroom 1	EW-1	2800	3795	W	700	NO
Bedroom 1	EW-1	2800	5095	N	1800	NO
Bedroom 2	EW-1	2800	3400	W	1200	YES
Bedroom 3	EW-1	2800	3595	S	100	YES
Bedroom 3	EW-1	2800	3200	W	100	NO
Bedroom 3	EW-1	2800	3895	N	700	YES
WIR	EW-1	2800	2190	W	700	NO
Ensuite	EW-1	2800	995	W	4000	YES
Entry Void	EW-1	2800	1795	N	1800	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		192.00	No insulation
IW-2 - Cavity brick, plasterboard		111.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Din/Liv	Suspended Concrete Slab 150mm	75.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
GF Lift	Suspended Concrete Slab 150mm	2.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	4.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Prep	Suspended Concrete Slab 150mm	4.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	5.90	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Flexi	Suspended Concrete Slab 150mm	14.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bedroom 1/Kit/Din/Liv	Timber Above Plasterboard 19mm	26.00		No Insulation	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2/Kit/Din/Liv	Timber Above Plasterboard 19mm	6.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Prep	Timber Above Plasterboard 19mm	1.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Bathroom	Timber Above Plasterboard 19mm	6.10		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Flexi	Timber Above Plasterboard 19mm	1.00		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kit/Din/Liv	Timber Above Plasterboard 19mm	5.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Flexi	Timber Above Plasterboard 19mm	2.50		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Timber Floor 19mm	9.40	Totally Open	No Insulation	Cork Tiles or Parquetry 8mm
WIR/Kit/Din/Liv	Timber Above Plasterboard 19mm	7.90		No Insulation	Cork Tiles or Parquetry 8mm
Ensuite/Kit/Din/Liv	Timber Above Plasterboard 19mm	9.00		No Insulation	Ceramic Tiles 8mm
Bathroom/Laundry	Timber Above Plasterboard 19mm	4.10		No Insulation	Ceramic Tiles 8mm
FF Lift/GF Lift	Timber Above Plasterboard 19mm	2.10		No Insulation	Bare
Entry Void/Kit/Din/Liv	Timber Above Plasterboard 19mm	4.50		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Kit/Din/Liv	Timber Above Plasterboard 19mm	13.50		No Insulation	Cork Tiles or Parquetry 8mm
Corridor/Prep	Timber Above Plasterboard 19mm	1.60		No Insulation	Cork Tiles or Parquetry 8mm
Linen/Prep	Timber Above Plasterboard 19mm	1.40		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Timber Above Plasterboard	No Insulation	No
GF Lift	Plasterboard	Bulk Insulation R4	No
GF Lift	Timber Above Plasterboard	No Insulation	No
Laundry	Plasterboard	Bulk Insulation R4	No
Laundry	Timber Above Plasterboard	No Insulation	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Prep	Plasterboard	Bulk Insulation R4	No
Prep	Timber Above Plasterboard	No Insulation	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Bathroom	Timber Above Plasterboard	No Insulation	No
Flexi	Plasterboard	Bulk Insulation R4	No
Flexi	Timber Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
FF Lift	Plasterboard	Bulk Insulation R4	No
Entry Void	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No
Linen	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Chimneys	350	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

* Refer to glossary.

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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).
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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
NatHERS Certificate No. 0008729709

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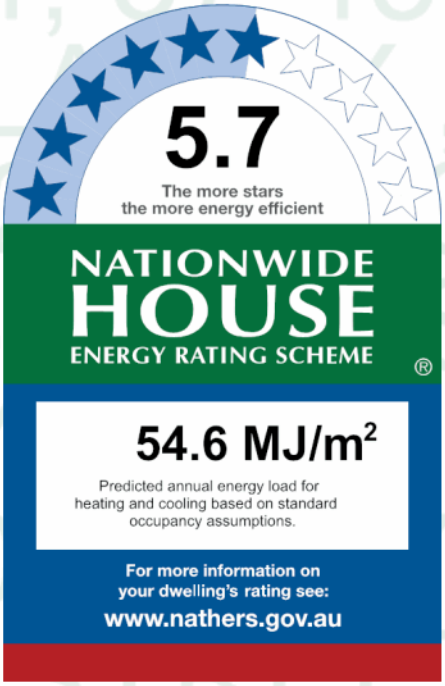

Property

Address	Unit 4, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	140.0	Suburban
Unconditioned*	3.0	**NatHERS climate zone**
Total	143.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
40.5	**14.1**
MJ/m^2	MJ/m^2

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

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=UGCQvEdZY.
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.

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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

Window and glazed door *schedule*

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	3495	n/a	60	W	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	W	No
Bedroom 3	BRD-033-01 A	n/a	2700	3135	n/a	45	E	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	4978	n/a	75	E	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2635	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	

Skylight *schedule*

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

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3795	W	3000	YES
Bedroom 2	EW-1	2700	3200	W	2700	NO
Bedroom 2	EW-1	2700	1300	N	19000	YES
Bedroom 2	EW-1	2700	4395	S	9800	NO
Bedroom 3	EW-1	2700	3395	E	4100	YES
Bedroom 3	EW-1	2700	5200	S	0	NO
Kit/Din/Liv	EW-1	2700	5100	E	2000	NO
Kit/Din/Liv	EW-1	2700	3000	S	0	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		97.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		100.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended Concrete Slab 150mm	16.70	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	13.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Concrete Slab 150mm	17.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
WIR	Suspended Concrete Slab 150mm	6.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Suspended Concrete Slab 150mm	9.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	3.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	5.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Suspended Concrete Slab 150mm	71.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	No insulation	No
Bedroom 2	Concrete, Plasterboard	No insulation	No
Bedroom 3	Concrete, Plasterboard	No insulation	No
WIR	Concrete, Plasterboard	No insulation	No
Ensuite	Concrete, Plasterboard	No insulation	No
Laundry	Concrete, Plasterboard	No insulation	No
Bathroom	Concrete, Plasterboard	No insulation	No
Kit/Din/Liv	Concrete, Plasterboard	No insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
None Present			

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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729741

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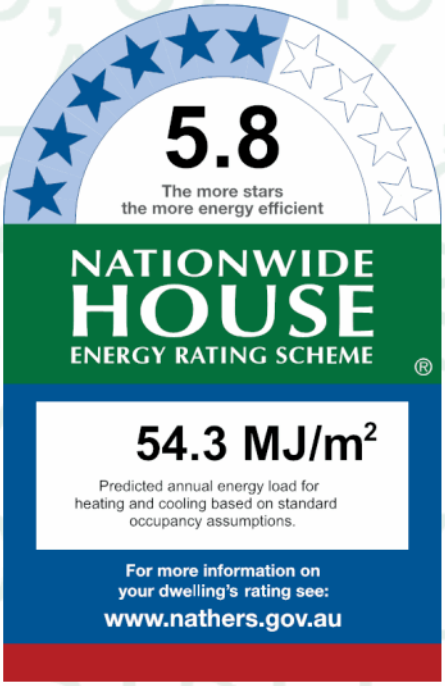


Property

Address	Unit 5, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	148.0	Suburban
Unconditioned*	5.0	**NatHERS climate zone**
Total	153.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
37.3 MJ/m^2	17.0 MJ/m^2

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

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=HqCumkbzC.
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.

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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

Window and glazed door *schedule*

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	1950	n/a	45	W	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	W	No
Bedroom 3	BRD-033-01 A	n/a	2700	3105	n/a	45	E	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	6384	n/a	75	E	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2635	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	

Skylight *schedule*

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

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	2495	W	2600	YES
Bedroom 1	EW-1	2700	500	S	5800	YES
Bedroom 1	EW-1	2700	1300	W	433	NO
Bedroom 1	EW-1	2700	5000	N	0	NO
Bedroom 2	EW-1	2700	4995	S	100	NO
Bedroom 2	EW-1	2700	3195	W	2600	NO
Bedroom 3	EW-1	2700	3395	W	1400	YES
Bedroom 3	EW-1	2700	3395	E	4400	YES
Bedroom 3	EW-1	2700	900	S	0	NO
Laundry	EW-1	2700	3290	S	100	NO
Bathroom	EW-1	2700	200	E	11800	YES
Bathroom	EW-1	2700	3495	S	100	NO
Entry	EW-1	2700	2590	S	0	YES
Kit/Din/Liv	EW-1	2700	2700	N	0	NO
Kit/Din/Liv	EW-1	2700	7600	E	2400	NO
Kit/Din/Liv	EW-1	2700	3000	S	0	YES

Internal wall *type*

* Refer to glossary.

Wall ID	Wall type	Area (m^2)	Bulk Insulation
IW-1 - Cavity brick, plasterboard		74.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		115.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended Concrete Slab 150mm	22.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	14.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Concrete Slab 150mm	16.10	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Suspended Concrete Slab 150mm	8.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	5.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	6.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Pantry	Suspended Concrete Slab 150mm	4.70	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Entry	Suspended Concrete Slab 150mm	21.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Suspended Concrete Slab 150mm	53.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 2	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 3	Concrete, Plasterboard	Bulk Insulation R1.7	No
Ensuite	Concrete, Plasterboard	Bulk Insulation R1.7	No
Laundry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bathroom	Concrete, Plasterboard	Bulk Insulation R1.7	No
Pantry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Entry	Concrete, Plasterboard	Bulk Insulation R1.7	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Din/Liv	Concrete, Plasterboard	Bulk Insulation R1.7	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	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
None Present			

* 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.

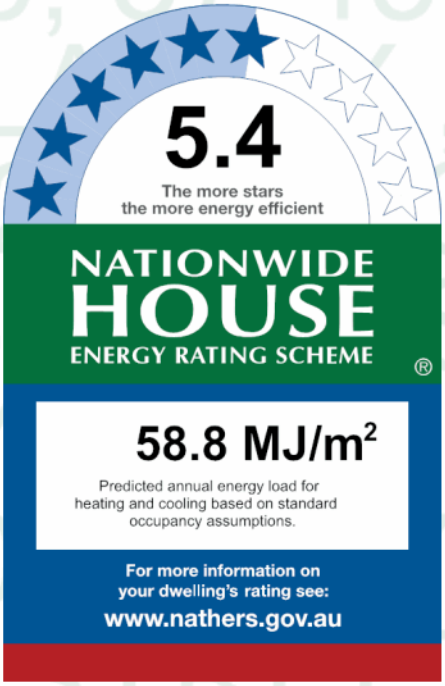
Glossary

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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729758

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 6, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	148.0	Suburban
Unconditioned*	5.0	**NatHERS climate zone**
Total	153.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
41.0	**17.8**
MJ/m^2	MJ/m^2

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

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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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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

Window and glazed door *schedule*

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	1950	n/a	45	E	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	E	No
Bedroom 3	BRD-033-01 A	n/a	2700	3105	n/a	45	W	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2635	n/a	45	S	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	6384	n/a	75	W	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								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	5000	N	9800	NO
Bedroom 1	EW-1	2700	1300	E	433	NO
Bedroom 1	EW-1	2700	500	S	5800	YES
Bedroom 1	EW-1	2700	2495	E	2600	YES
Bedroom 2	EW-1	2700	3195	E	2600	NO
Bedroom 2	EW-1	2700	4995	S	100	NO
Bedroom 3	EW-1	2700	900	S	0	NO
Bedroom 3	EW-1	2700	3395	W	4300	YES
Bedroom 3	EW-1	2700	3395	E	1400	YES
Laundry	EW-1	2700	3290	S	100	NO
Bathroom	EW-1	2700	3495	S	100	NO
Bathroom	EW-1	2700	200	W	11700	YES
Entry	EW-1	2700	2590	S	0	YES
Kit/Din/Liv	EW-1	2700	3000	S	0	YES
Kit/Din/Liv	EW-1	2700	7600	W	2000	NO
Kit/Din/Liv	EW-1	2700	2700	N	9000	NO

Internal wall *type*

* Refer to glossary.

Wall ID	Wall type	Area (m^2)	Bulk Insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		115.00	No insulation
IW-2 - Cavity brick, plasterboard		74.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended Concrete Slab 150mm	22.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	14.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Concrete Slab 150mm	16.10	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Suspended Concrete Slab 150mm	8.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	5.40	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	6.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Pantry	Suspended Concrete Slab 150mm	4.70	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Entry	Suspended Concrete Slab 150mm	21.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Suspended Concrete Slab 150mm	53.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 2	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 3	Concrete, Plasterboard	Bulk Insulation R1.7	No
Ensuite	Concrete, Plasterboard	Bulk Insulation R1.7	No
Laundry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bathroom	Concrete, Plasterboard	Bulk Insulation R1.7	No
Pantry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Entry	Concrete, Plasterboard	Bulk Insulation R1.7	No

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Din/Liv	Concrete, Plasterboard	Bulk Insulation R1.7	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	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
None Present			

* 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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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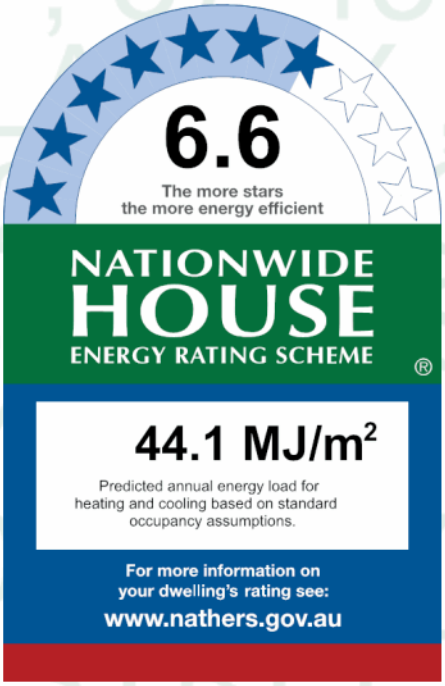
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides 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.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729717

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 7, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure type**
Conditioned*	141.0	Suburban
Unconditioned*	3.0	
Total	144.0	**NatHERS climate zone**
Garage	0.0	56

Thermal performance

Heating	Cooling
24.3	**19.8**
MJ/m^2	MJ/m^2

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

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=IKJHvChgu.
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.

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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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	3495	n/a	60	E	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	E	No
Bedroom 3	BRD-033-01 A	n/a	2700	3135	n/a	45	W	No
Ensuite	BRD-063-01 A	n/a	2700	975	n/a	00	N	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2635	n/a	45	S	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	4978	n/a	75	W	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	3135	n/a	45	N	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4595	N	100	NO
Bedroom 1	EW-1	2700	3795	E	3900	YES
Bedroom 2	EW-1	2700	3200	E	2700	NO
Bedroom 2	EW-1	2700	4395	S	9800	NO
Bedroom 2	EW-1	2700	1200	N	3900	YES
Bedroom 3	EW-1	2700	3295	W	4000	YES
Ensuite	EW-1	2700	2390	N	100	YES
Kit/Din/Liv	EW-1	2700	2900	S	0	YES
Kit/Din/Liv	EW-1	2700	5100	W	2000	NO
Kit/Din/Liv	EW-1	2700	8500	N	100	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2700	600	W	100	YES
Kit/Din/Liv	EW-1	2700	3400	N	100	NO
Kit/Din/Liv	EW-1	2700	600	E	100	YES
WIR	EW-1	2700	1990	N	100	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		116.00	No insulation
IW-2 - Cavity brick, plasterboard		54.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Suspended Concrete Slab 150mm	17.10	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	13.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 3	Suspended Concrete Slab 150mm	17.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Suspended Concrete Slab 150mm	8.70	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Laundry	Suspended Concrete Slab 150mm	2.80	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Suspended Concrete Slab 150mm	5.30	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Entry	Suspended Concrete Slab 150mm	16.60	Enclosed	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Suspended Concrete Slab 150mm	56.00	Enclosed	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork
WIR	Suspended Concrete Slab 150mm	6.20	Enclosed	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 2	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bedroom 3	Concrete, Plasterboard	Bulk Insulation R1.7	No
Ensuite	Concrete, Plasterboard	Bulk Insulation R1.7	No
Laundry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Bathroom	Concrete, Plasterboard	Bulk Insulation R1.7	No
Entry	Concrete, Plasterboard	Bulk Insulation R1.7	No
Kit/Din/Liv	Concrete, Plasterboard	Bulk Insulation R1.7	No
WIR	Concrete, Plasterboard	Bulk Insulation R1.7	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	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
None Present			

* 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.

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729725

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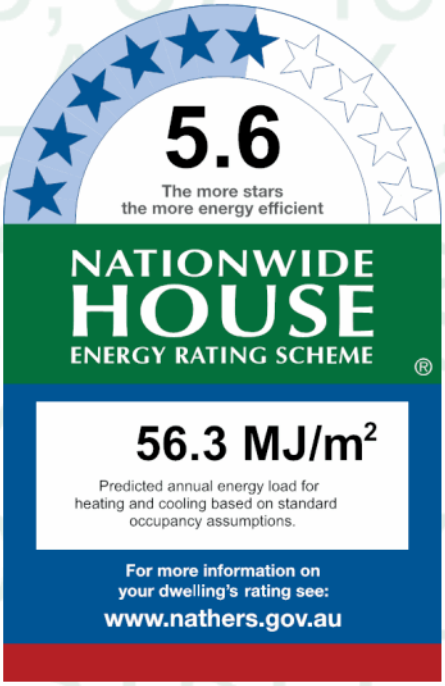

Property

Address	Unit 8, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	154.0
Unconditioned*	8.0
Total	163.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
56

Thermal performance

Heating	Cooling
32.6 MJ/m^2	23.7 MJ/m^2

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

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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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.

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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".

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

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I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
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				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78
BRD-001-01 A	BRD-001-01 A ESS Sliding Window (52mm) SG 3Clr	6.4	0.76	0.72	0.80
BRD-112-01 A	BRD-112-01 A ESS Awning 52 SG 4mmClr	6.5	0.67	0.64	0.70
BRD-030-01 A	BRD-030-01 A ESS Hinged Door (100mm) SG 4Clr	6.1	0.62	0.59	0.65

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-063-01 A	n/a	2700	600	n/a	00	S	No
Bedroom 1	BRD-033-01 A	n/a	2700	3495	n/a	45	W	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	W	No
Ensuite	BRD-001-01 A	n/a	600	1900	n/a	10	S	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2673	n/a	45	N	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	4978	n/a	75	E	No
Kit/Din/Liv	BRD-063-01 A	n/a	2700	855	n/a	00	S	Yes
Living	BRD-033-01 A	n/a	2700	4411	n/a	45	E	No
Living	BRD-063-01 A	n/a	1200	4419	n/a	00	E	No
Living	BRD-112-01 A	n/a	550	4562	n/a	00	N	No Shading
Bedroom 3	BRD-033-01 A	n/a	2700	1900	n/a	45	W	No
Laundry	BRD-030-01 A	n/a	2700	960	n/a	100	S	No
WC	BRD-063-01 A	n/a	2700	920	n/a	00	S	Yes

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					

* Refer to glossary.

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ensuite	VEL-012-01 W	n/a	0	780	780	W	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	4495	S	600	NO
Bedroom 1	EW-1	2700	3795	W	2200	YES
Bedroom 2	EW-1	2700	4495	N	9800	YES
Bedroom 2	EW-1	2700	1300	S	4400	YES
Bedroom 2	EW-1	2700	3200	W	900	NO
WIR	EW-1	2700	2090	S	600	NO
Ensuite	EW-1	2700	2495	S	600	NO
Kit/Din/Liv	EW-1	2700	1400	W	15200	YES
Kit/Din/Liv	EW-1	2700	3100	N	0	YES
Kit/Din/Liv	EW-1	2700	5000	E	900	NO
Kit/Din/Liv	EW-1	2700	9800	S	700	NO
Living	EW-1	3900	4595	E	3300	YES
Bedroom 3	EW-1	2800	2200	W	2700	YES
Laundry	EW-1	2700	2290	S	2100	YES
WC	EW-1	2700	1590	S	2300	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		134.00	No insulation
IW-2 - Cavity brick, plasterboard		72.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	16.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	14.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
WIR	Concrete Slab, Unit Below 150mm	6.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Concrete Slab, Unit Below 150mm	9.10	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	Concrete Slab, Unit Below 150mm	5.30	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Concrete Slab, Unit Below 150mm	47.30	None	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork
Corridor	Concrete Slab, Unit Below 150mm	19.20	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Living	Concrete Slab, Unit Below 150mm	22.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 3	Concrete Slab, Unit Below 150mm	13.00	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab, Unit Below 150mm	5.00	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
WC	Concrete Slab, Unit Below 150mm	3.40	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No
Living	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Laundry	Plasterboard	Bulk Insulation R4	No
WC	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
WC	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	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.

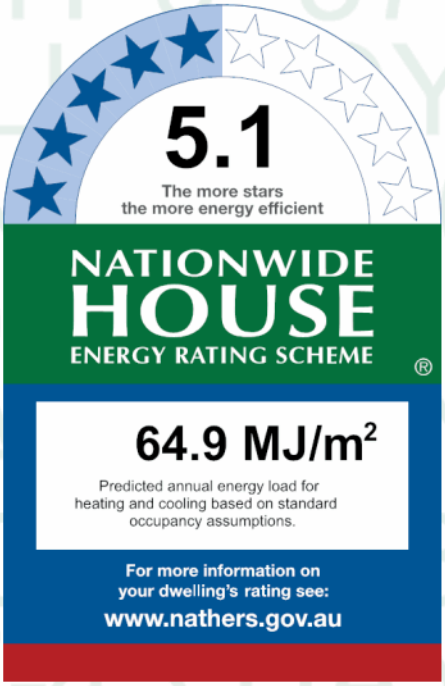
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

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 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
NatHERS Certificate No. 0008729774-01

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



Property

Address	Unit 9, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	170.0
Unconditioned*	4.0
Total	174.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
56

Thermal performance

Heating	Cooling
39.4	25.5
MJ/m^2	MJ/m^2

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

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=INvcSOnfO.
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.

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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	1950	n/a	45	W	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	W	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2673	n/a	45	N	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	5100	n/a	75	E	No
Bedroom 3	BRD-063-01 A	n/a	2700	1590	n/a	00	W	No
Corridor	BRD-033-01 A	n/a	2700	3502	n/a	45	N	No
Living	BRD-033-01 A	n/a	2700	4389	n/a	45	E	No
Living	BRD-063-01 A	n/a	1200	4389	n/a	00	E	No
Living	BRD-033-01 A	n/a	2700	2898	n/a	45	W	No
Living	BRD-063-01 A	n/a	1200	2898	n/a	00	W	No
Flexi	BRD-033-01 A	n/a	2700	2898	n/a	45	E	No

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

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

* Refer to glossary.

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ensuite	VEL-012-01 W	n/a	0	780	780	W	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	2900	S	100	NO
Bedroom 1	EW-1	2700	3795	W	1700	YES
Bedroom 2	EW-1	2700	4495	N	100	YES
Bedroom 2	EW-1	2700	1300	S	2600	YES
Bedroom 2	EW-1	2700	3200	W	1000	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2700	3100	N	0	YES
Kit/Din/Liv	EW-1	2700	5100	E	600	NO
Kit/Din/Liv	EW-1	2700	2700	S	100	NO
Bedroom 3	EW-1	2700	3200	W	1600	YES
Bedroom 3	EW-1	2700	900	N	10900	NO
Corridor	EW-1	2700	3790	N	0	YES
Living	EW-1	3900	1200	N	0	NO
Living	EW-1	3900	4595	E	3700	YES
Living	EW-1	3900	3100	W	13400	YES
Flexi	EW-1	2700	3100	E	12200	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		155.00	No insulation
IW-2 - Cavity brick, plasterboard		98.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	16.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	14.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
WIR	Concrete Slab, Unit Below 150mm	6.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Concrete Slab, Unit Below 150mm	8.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Concrete Slab, Unit Below 150mm	4.40	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Concrete Slab, Unit Below 150mm	34.10	None	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork
Bedroom 3	Concrete Slab, Unit Below 150mm	16.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Corridor	Concrete Slab, Unit Below 150mm	26.30	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	Concrete Slab, Unit Below 150mm	4.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
WC	Concrete Slab, Unit Below 150mm	3.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Living	Concrete Slab, Unit Below 150mm	20.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Flexi	Concrete Slab, Unit Below 150mm	17.50	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No
Laundry	Plasterboard	Bulk Insulation R4	No
WC	Plasterboard	Bulk Insulation R4	No
Living	Plasterboard	Bulk Insulation R4	No
Flexi	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
WC	1	Exhaust Fans	300	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

About this report

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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.

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729790

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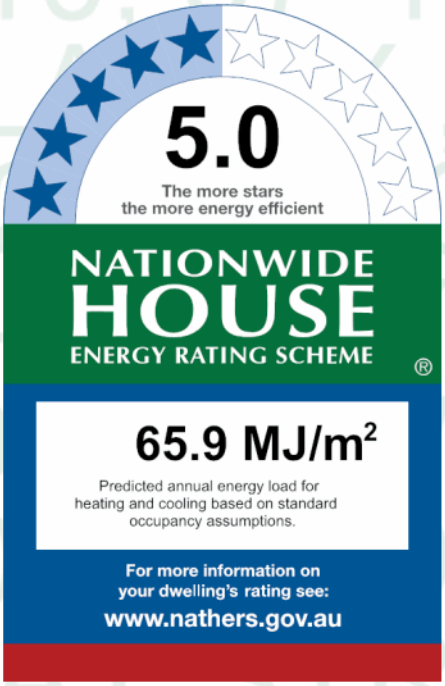

Property

Address	Unit 10, 37-43 Hay Street , Collaroy , NSW , 2097
Lot/DP	10648
NCC Class*	2
Type	New Dwelling

Plans

Main plan	E 22/06/2023
Prepared by	PopovBass Architects

Construction and environment

Assessed floor area (m^2)*	
Conditioned*	170.0
Unconditioned*	4.0
Total	174.0
Garage	0.0

Exposure type
Suburban

NatHERS climate zone
56

Thermal performance

Heating	Cooling
45.0 MJ/m^2	20.9 MJ/m^2

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

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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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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-12 A	BRD-033-12 A ESS Sliding Door (80mm) SG 6SP50	4.2	0.31	0.29	0.33

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-063-12 A	BRD-063-12 A SIG Fixed Lite (67mm) SG 638CP	4.1	0.47	0.45	0.49
BRD-028-08 A	BRD-028-08 A ESS Awning Window (52mm) DG 4-6-4	4.6	0.55	0.52	0.58
BRD-064-01 A	BRD-064-01 A SIG Fixed Lite (67mm) DG 4-6Ar-4	3.5	0.69	0.66	0.72

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-12 A	n/a	2700	1950	n/a	45	W	No
Bedroom 2	BRD-033-12 A	n/a	2700	3170	n/a	45	W	No
Kit/Din/Liv	BRD-033-12 A	n/a	2700	5100	n/a	75	E	No
Kit/Din/Liv	BRD-033-12 A	n/a	2700	2673	n/a	45	S	No
Bedroom 3	BRD-033-12 A	n/a	2700	2898	n/a	45	W	No
Bedroom 3	BRD-063-12 A	n/a	600	2898	n/a	00	W	No
Bedroom 3	BRD-028-08 A	n/a	600	3600	n/a	00	N	No Shading
Corridor	BRD-033-12 A	n/a	2700	3502	n/a	45	S	No
Living	BRD-033-12 A	n/a	2700	2898	n/a	45	W	No
Living	BRD-064-01 A	n/a	1250	2898	n/a	00	W	No
Living	BRD-033-12 A	n/a	2700	4389	n/a	45	E	No
Living	BRD-064-01 A	n/a	1250	4389	n/a	00	E	No
Living	BRD-028-08 A	n/a	600	4600	n/a	00	N	No Shading
Flexi	BRD-033-12 A	n/a	2700	2898	n/a	45	E	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					

* Refer to glossary.

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ensuite	VEL-012-01 W	n/a	0	780	780	NW	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3795	W	2400	YES
Bedroom 1	EW-1	2700	2900	N	100	NO
Bedroom 2	EW-1	2700	3200	W	1100	NO
Bedroom 2	EW-1	2700	1300	N	2767	YES
Bedroom 2	EW-1	2700	4495	S	100	NO
Kit/Din/Liv	EW-1	2700	2700	N	0	NO
Kit/Din/Liv	EW-1	2700	5100	E	1300	NO
Kit/Din/Liv	EW-1	2700	3100	S	0	YES
Bedroom 3	EW-1	3950	3200	W	1500	NO
Corridor	EW-1	2700	3790	S	0	YES
Living	EW-1	3950	3200	W	13300	YES
Living	EW-1	3950	4695	E	3600	YES
Living	EW-1	3950	900	S	0	NO
Flexi	EW-1	2700	3100	E	12100	YES
Flexi	EW-1	2700	1000	S	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		100.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		155.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	16.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	14.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
WIR	Concrete Slab, Unit Below 150mm	6.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Concrete Slab, Unit Below 150mm	8.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	Concrete Slab, Unit Below 150mm	4.40	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Concrete Slab, Unit Below 150mm	34.10	None	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork
Bedroom 3	Concrete Slab, Unit Below 150mm	16.10	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Corridor	Concrete Slab, Unit Below 150mm	26.30	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab, Unit Below 150mm	4.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
WC	Concrete Slab, Unit Below 150mm	3.80	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Living	Concrete Slab, Unit Below 150mm	21.20	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Flexi	Concrete Slab, Unit Below 150mm	17.50	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No
Laundry	Plasterboard	Bulk Insulation R4	No
WC	Plasterboard	Bulk Insulation R4	No
Living	Plasterboard	Bulk Insulation R4	No
Flexi	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
Laundry	1	Exhaust Fans	300	Sealed
WC	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	Bulk, Reflective Side Down, No Air Gap Above R1.3	0.50	Medium

Explanatory notes

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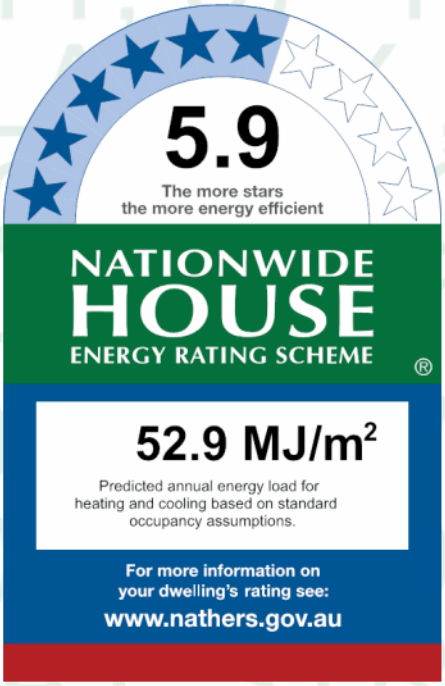
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0008729782

Generated on 27 Jun 2023 using BERS Pro v4.4.1.5 (3.21)



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Main plan	E 22/06/2023
Prepared by	PopovBass Architects

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Total	162.0
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Exposure type
Suburban

NatHERS climate zone
56

Thermal performance

Heating	Cooling
28.8	24.1
MJ/m^2	MJ/m^2

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

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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

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.

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-033-01 A	BRD-033-01 A ESS Sliding Door (80mm) SG 4Clr	6.2	0.74	0.70	0.78

* Refer to glossary.

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
BRD-063-01 A	BRD-063-01 A SIG Fixed Lite (67mm) SG 4Clr	6.0	0.78	0.74	0.82
BRD-030-01 A	BRD-030-01 A ESS Hinged Door (100mm) SG 4Clr	6.1	0.62	0.59	0.65
BRD-112-01 A	BRD-112-01 A ESS Awning 52 SG 4mmClr	6.5	0.67	0.64	0.70

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	BRD-033-01 A	n/a	2700	3495	n/a	60	W	No
Bedroom 2	BRD-033-01 A	n/a	2700	3170	n/a	45	W	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	4978	n/a	75	E	No
Kit/Din/Liv	BRD-033-01 A	n/a	2700	2673	n/a	45	S	No
Kit/Din/Liv	BRD-063-01 A	n/a	550	4685	n/a	00	N	No Shading
Bedroom 3	BRD-033-01 A	n/a	2700	1900	n/a	45	W	No
Laundry	BRD-030-01 A	n/a	2700	960	n/a	100	N	No
WC	BRD-063-01 A	n/a	2700	920	n/a	00	N	No
Flexi	BRD-063-01 A	n/a	1100	4411	n/a	00	E	No
Flexi	BRD-112-01 A	n/a	650	4682	n/a	00	N	No Shading

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-012-01 W	Glass	4.0	0.27	0.26	0.28

Roof window *schedule*

* Refer to glossary.

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Ensuite	VEL-012-01 W	n/a	0	780	780	W	No	No

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Brick Veneer	0.50	Medium	Bulk Insulation R2	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	EW-1	2700	3795	W	3000	YES
Bedroom 2	EW-1	2700	3200	W	2700	NO
Bedroom 2	EW-1	2700	1300	N	19000	YES
Bedroom 2	EW-1	2700	4395	S	9800	YES
Ensuite	EW-1	2700	1400	E	14900	YES

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Din/Liv	EW-1	2700	1400	W	16000	YES
Kit/Din/Liv	EW-1	500	9800	N	15200	NO
Kit/Din/Liv	EW-1	2700	5000	E	1300	NO
Kit/Din/Liv	EW-1	2700	3100	S	14700	YES
Bedroom 3	EW-1	2700	2100	W	2900	YES
Laundry	EW-1	2700	2190	N	16600	YES
WC	EW-1	2700	1590	N	5700	YES
Flexi	EW-1	4000	4595	E	3600	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		125.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		142.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	Concrete Slab, Unit Below 150mm	16.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Bedroom 2	Concrete Slab, Unit Below 150mm	13.80	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
WIR	Concrete Slab, Unit Below 150mm	6.70	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Ensuite	Concrete Slab, Unit Below 150mm	9.50	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Bathroom	Concrete Slab, Unit Below 150mm	5.50	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Kit/Din/Liv	Concrete Slab, Unit Below 150mm	47.30	None	Bulk Insulation in Contact with Floor R1.7	40/60 Ceramic/Cork
Bedroom 3	Concrete Slab, Unit Below 150mm	13.50	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Corridor	Concrete Slab, Unit Below 150mm	18.30	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab, Unit Below 150mm	5.00	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm

* Refer to glossary.

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
WC	Concrete Slab, Unit Below 150mm	3.60	None	Bulk Insulation in Contact with Floor R1.7	Ceramic Tiles 8mm
Flexi	Concrete Slab, Unit Below 150mm	22.20	None	Bulk Insulation in Contact with Floor R1.7	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	Bulk Insulation R4	No
Bedroom 2	Plasterboard	Bulk Insulation R4	No
WIR	Plasterboard	Bulk Insulation R4	No
Ensuite	Plasterboard	Bulk Insulation R4	No
Bathroom	Plasterboard	Bulk Insulation R4	No
Kit/Din/Liv	Plasterboard	Bulk Insulation R4	No
Bedroom 3	Plasterboard	Bulk Insulation R4	No
Corridor	Plasterboard	Bulk Insulation R4	No
Laundry	Plasterboard	Bulk Insulation R4	No
WC	Plasterboard	Bulk Insulation R4	No
Flexi	Plasterboard	Bulk Insulation R4	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bathroom	1	Exhaust Fans	300	Sealed
Kit/Din/Liv	1	Exhaust Fans	300	Sealed
WC	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)

* Refer to glossary.

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
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 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.