

Nationwide House Energy Rating Scheme — Class 1 Summary

NatHERS Certificate No. #HR-FQDIFB-01

Generated on 15 Dec 2021 using HERO v1.2-beta

Property

Address 75 Shirley Street, BYRON BAY, NSW, 2481

Lot/DP

NatHERS climate zone 10 - Brisbane AMO

Accredited assessor



Duncan Hope

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Accreditation No. DMN/14/1658

Assessor Accrediting Organisation DMN



Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-FQDIFB-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-FHNYDQ-01	Lot A	10.1	30.1	40.2	6.3
HR-32OT2N-01	Lot B	20.7	37.4	58.1	4.8
HR-QO2RXS-01	Lot C	20.3	40.2	60.5	4.6
Maximum Loads and Minimum Rating		20.7	40.2	60.5	4.6

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



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
Average	3x (Total)	17.0	35.9	52.9	5.2

Explanatory Notes

About this report

This summary rating is the ratings of all NCC Class 1 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

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. #HR-FHNYDQ-01

Generated on 15 Dec 2021 using HERO v1.2-beta

Property

Address Lot A, 75 Shirley Street, BYRON BAY,
NSW, 2481

Lot/DP

NCC Class* 1a

Type New

Plans

Main Plan HGA225

Prepared by Harley Graham Architects

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	147.8
Unconditioned*	12.3
Total	195.8
Garage	35.8
	NatHERS climate zone
	10 - Brisbane AMO



Accredited assessor

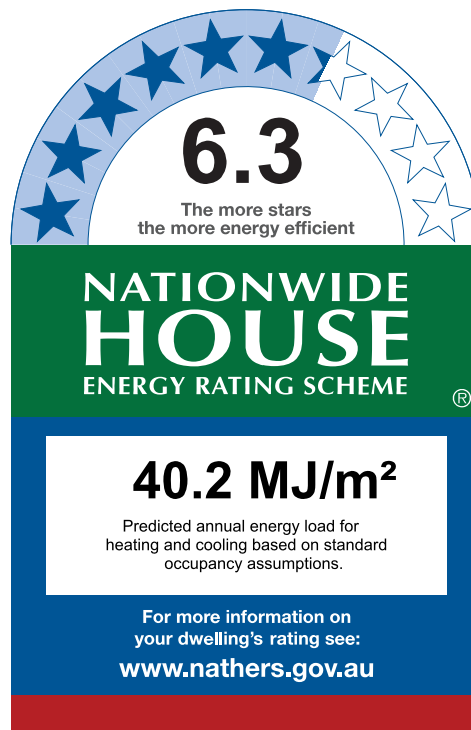
Name	Duncan Hope
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Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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



Thermal Performance

Heating	Cooling
10.1	30.1
MJ/m ²	MJ/m ²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

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* Refer to glossary.

Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
GJA-071-01 A	Type 245 Aluminium Sliding Door DG 4/10/4	3.98	0.63	0.60	0.66

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bathroom	ALM-002-03 A	WA.07	2700	1130	Fixed	0	WNW	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-03 A	WA.14	2700	815	Double Hung	45	ESE	None
Bedroom 01	ALM-002-03 A	DA.08	2700	2180	Sliding	45	ESE	None
Bedroom 02	ALM-002-03 A	WA.05	1660	965	Fixed	0	WNW	None
Bedroom 02	ALM-001-03 A	WA.06	2700	2250	Casement	45	WNW	None
Bedroom 03	ALM-002-03 A	WA.08	1660	965	Fixed	0	WNW	None
Bedroom 03	ALM-001-03 A	WA.09	2700	2365	Casement	45	WNW	None
Bedroom 03	ALM-002-03 A	WA.10	1700	600	Louvre	90	NNE	None
Bedroom 04	ALM-002-03 A	WA.13	2700	1100	Louvre	90	ESE	None
Bedroom 04	ALM-002-03 A	DA.07	2700	2150	Sliding	45	ESE	None
Bedroom 04	ALM-002-03 A	WA.12	1700	600	Louvre	90	NNE	None
Ensuite	ALM-002-03 A	WA.15	1650	1355	Double Hung	22	ESE	None
Hallway Upstairs	ALM-001-03 A	DA.09	2700	720	Casement	90	NNE	None
Kitchen/Living	ALM-001-03 A	DA.05	2100	900	Awning	60	ESE	None
Kitchen/Living	ALM-002-03 A	WA.03	1280	1130	Fixed	0	WNW	None
Kitchen/Living	ALM-003-01 A	WA.04	1280	3230	Double Hung	16	WNW	None
Kitchen/Living	GJA-071-01 A	DA.03	2100	3550	Awning	20	NNE	None
Kitchen/Living	GJA-071-01 A	DA.04	2100	5150	Awning	20	NNE	None
Kitchen/Living	ALM-001-03 A	DA.06	2100	3280	Awning	20	ESE	None
Laundry	ALM-002-03 A	WA.01	1280	755	Double Hung	45	WNW	None
Kitchen/Living	ALM-002-03 A	WA.11	2700	2395	Fixed	0	NNE	None
WC	ALM-002-03 A	WA.02	1280	810	Double Hung	45	WNW	None

Roof window *type and performance value*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2040	5800	90	ESE
Kitchen/Living	2100	900	90	WNW
Laundry	2040	950	90	WNW

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	BV-REFL-CAV: Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.00	Yes
WB-REFL-CAV	WB-REFL-CAV: Weatherboard Battened (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	WB-REFL-CAV	2701	1860	WNW	477	Yes
Bedroom 01	WB-REFL-CAV	2701	4067	ESE	1729	Yes
Bedroom 02	WB-REFL-CAV	2701	4001	WNW	477	Yes
Bedroom 02	WB-REFL-CAV	2701	1500	SSW	14005	Yes

* Refer to glossary.



Bedroom 03	WB-REFL-CAV	2701	3467	WNW	477	Yes
Bedroom 03	WB-REFL-CAV	2701	3362	NNE	778	Yes
Bedroom 04	WB-REFL-CAV	2701	3510	ESE	1729	Yes
Bedroom 04	WB-REFL-CAV	2701	3501	NNE	825	Yes
Ensuite	WB-REFL-CAV	2701	1800	ESE	1733	Yes
Ensuite	WB-REFL-CAV	2701	69	NNE		Yes
Ensuite	WB-REFL-CAV	2701	13	NNE		Yes
Garage	BV-REFL-CAV	2667	5981	ESE	1072	Yes
Garage	BV-REFL-CAV	2667	180	NNE		Yes
Hallway	BV-REFL-CAV	2667	1184	SSW	28193	Yes
Hallway	BV-REFL-CAV	2667	40	ESE		Yes
Hallway Upstairs	WB-REFL-CAV	2701	1274	ESE		Yes
Hallway Upstairs	WB-REFL-CAV	2701	776	NNE	1154	Yes
Kitchen/Living	BV-REFL-CAV	2667	1111	ESE	1252	Yes
Kitchen/Living	BV-REFL-CAV	2667	6213	WNW	205	Yes
Kitchen/Living	BV-REFL-CAV	2667	10911	NNE		Yes
Kitchen/Living	BV-REFL-CAV	2667	140	SSW		Yes
Kitchen/Living	BV-REFL-CAV	2667	3380	ESE	1252	Yes
Kitchen/Living	BV-REFL-CAV	2667	202	ESE	1252	Yes
Laundry	BV-REFL-CAV	2667	1883	SSW	28193	Yes
Laundry	BV-REFL-CAV	2667	2250	WNW	1782	Yes
Laundry	BV-REFL-CAV	2667	62	NNE		Yes
Upstairs	WB-REFL-CAV	2701	119	SSW		Yes
Upstairs	WB-REFL-CAV	2701	169	WNW		Yes
Upstairs	WB-REFL-CAV	2701	159	ESE		Yes
Upstairs	WB-REFL-CAV	2701	117	NNE		Yes
Upstairs	WB-REFL-CAV	2701	41	NNE		Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Upstairs	WB-REFL-CAV	2701	138	WNW		Yes
Upstairs	WB-REFL-CAV	2701	348	SSW		Yes
Kitchen/Living	WB-REFL-CAV	2701	2467	NNE	1154	Yes
Kitchen/Living	WB-REFL-CAV	2701	1274	WNW		Yes
WC	BV-REFL-CAV	2667	1388	SSW	30705	Yes
WC	BV-REFL-CAV	2667	2054	WNW	407	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m ²)	Bulk insulation
CONBLOCK-190-PB1	Concrete Block 190mm Concrete - Plasterboard Internally	41.1	0.00
CONCBLOCK-190-FCF-PB	Concrete Block 190mm Fully Core-Filled - Plasterboard Internally	37.2	0.00
INT-PB	Internal Plasterboard Stud Wall	91.9	0.00

Floor *type*

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.9	N/A	0.00	Timber
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Timber
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.00	Timber
Bedroom 04	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Timber
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Tile
Garage	CSOG-100: Concrete Slab on Ground (100mm)	35.8	N/A	0.00	Exposed
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.6	Enclosed (Disc.)	0.00	Timber
Hallway Upstairs	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Timber
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	58.7	Enclosed (Disc.)	0.00	Timber
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	Enclosed (Disc.)	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Upstairs	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	23.0	N/A	0.00	Timber
Vestibule	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	Enclosed (Disc.)	0.00	Timber
WC	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	Enclosed (Disc.)	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 04	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Garage	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Hallway Upstairs	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Upstairs	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Vestibule	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	3.00	Yes
WC	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	250	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 03	2	Downlight	100	Sealed
Bedroom 04	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	250	Sealed
Hallway	1	Downlight	100	Sealed
Hallway Upstairs	1	Downlight	100	Sealed
Kitchen/Living	8	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	250	Sealed
Laundry	1	Downlight	100	Sealed
Upstairs	3	Downlight	100	Sealed
Void	2	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 01	1	1200
Bedroom 02	1	1200
Bedroom 03	1	1200
Bedroom 04	1	1200
Kitchen/Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	1.30	0.74	Dark (Ironstone)
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.74	Dark (Ironstone)

* 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.

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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. #HR-32OT2N-01

Generated on 15 Dec 2021 using HERO v1.2-beta

Property

Address Lot B, 75 Shirley Street, BYRON BAY,
NSW, 2481

Lot/DP

NCC Class* 1a

Type New

Plans

Main Plan HGA225

Prepared by Harley Graham Architects

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	175.1
Unconditioned*	7.7
Total	218.2
Garage	35.5
	NatHERS climate zone
	10 - Brisbane AMO



Accredited assessor

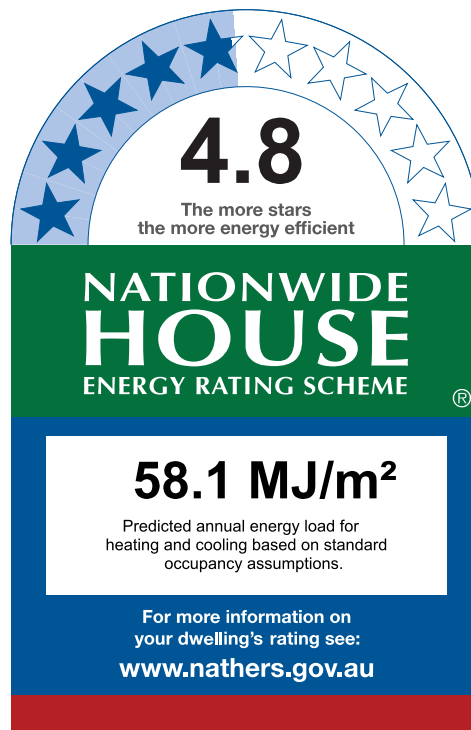
Name	Duncan Hope
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Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

National Construction Code (NCC) requirements

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

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

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



Thermal Performance

Heating	Cooling
20.7	37.4
MJ/m ²	MJ/m ²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-32OT2N-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
GJA-071-01 A	Type 245 Aluminium Sliding Door DG 4/10/4	3.98	0.63	0.60	0.66

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-03 A	WB.12	2700	755	Double Hung	45	ESE	None
Bedroom 01	ALM-002-03 A	DB.07	2700	1950	Sliding	45	ESE	None

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-03 A	DB.05	2700	2500	Sliding	45	WNW	None
Bedroom 02	ALM-002-03 A	WB.04	2700	710	Double Hung	45	WNW	None
Bedroom 03	ALM-002-03 A	DB.06	2700	2430	Sliding	45	WNW	None
Bedroom 03	ALM-002-03 A	WB.08	2700	720	Louvre	90	WNW	None
Bedroom 04	ALM-001-03 A	WB.09	1500	1500	Casement	45	ESE	None
Bedroom 04	ALM-002-03 A	WB.10	1500	1252	Fixed	0	ESE	None
Ensuite	ALM-002-03 A	WB.13	1685	1310	Double Hung	22	ESE	None
Entry	ALM-001-03 A	WB.03	2100	1390	Awning	30	ESE	None
Kitchen/Living	GJA-071-01 A	DB.01	2650	9140	Sliding	66	WNW	None
Kitchen/Living	GJA-071-01 A	DB.02	2650	3570	Sliding	66	NNE	None
Laundry	ALM-001-03 A	WB.02	2100	480	Awning	60	NNE	None
Living	GJA-071-01 A	DB.03	2650	4170	Sliding	66	WNW	None
Void	ALM-002-03 A	WB.11	2400	2985	Fixed	0	ESE	None
Kitchen/Living	ALM-002-03 A	WB.05	2700	710	Double Hung	45	WNW	None
Kitchen/Living	ALM-002-03 A	WB.06	2700	3725	Fixed	0	WNW	None
WC	ALM-001-03 A	WB.01	2100	810	Awning	60	ESE	None

Roof window *type and performance value*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

* Refer to glossary.

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry	2040	1517	90	ESE
Garage	2040	5810	90	ESE

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV-A	BV-REFL-CAV: Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.00	Yes
BV-REFL-CAV-B	BV-REFL-CAV: Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	0.00	Yes
WB-REFL-CAV	WB-REFL-CAV: Weatherboard Battened (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	WB-REFL-CAV	2701	4051	ESE	1870	Yes
Bedroom 02	WB-REFL-CAV	2701	4398	WNW	1977	Yes
Bedroom 03	WB-REFL-CAV	2701	4201	WNW	1977	Yes
Bedroom 04	WB-REFL-CAV	2701	4171	ESE	219	Yes
Bedroom 04	WB-REFL-CAV	2701	1040	SSW	7544	Yes
Bedroom 04	WB-REFL-CAV	2701	1514	NNE	10680	Yes
Ensuite	WB-REFL-CAV	2701	1836	ESE	1870	Yes
Entry	BV-REFL-CAV-A	2667	2986	ESE	1062	Yes

* Refer to glossary.



Garage	BV-REFL-CAV-A	2667	5936	ESE	1072	Yes
Hallway	BV-REFL-CAV-B	2440	224	NW		Yes
Hallway	BV-REFL-CAV-B	2440	24	NNE		Yes
Hallway	BV-REFL-CAV-B	2440	24	NNW		Yes
Hallway	BV-REFL-CAV-B	2440	16	N		Yes
Hallway	BV-REFL-CAV-B	2440	16	WNW		Yes
Hallway	BV-REFL-CAV-B	2440	24	NNW		Yes
Hallway	BV-REFL-CAV-B	2440	24	NNE		Yes
Hallway	BV-REFL-CAV-B	2440	16	N		Yes
Kitchen/Living	BV-REFL-CAV-A	2667	9212	WNW	1364	Yes
Kitchen/Living	BV-REFL-CAV-A	2667	3721	NNE		Yes
Kitchen/Living	BV-REFL-CAV-A	2667	299	ESE		Yes
Kitchen/Living	BV-REFL-CAV-A	2667	15	ESE		Yes
Laundry	BV-REFL-CAV-A	2667	2302	ESE		Yes
Laundry	BV-REFL-CAV-A	2667	1037	SSW		Yes
Laundry	BV-REFL-CAV-A	2667	813	NNE		Yes
Living	BV-REFL-CAV-A	2667	24	SSW		Yes
Living	BV-REFL-CAV-A	2667	15	SSE		Yes
Living	BV-REFL-CAV-A	2667	24	SE		Yes
Living	BV-REFL-CAV-A	2667	4480	WNW	5235	Yes
Living	BV-REFL-CAV-A	2667	80	NNE		Yes
Living	BV-REFL-CAV-A	2667	24	SE		Yes
Living	BV-REFL-CAV-A	2667	16	SSE		Yes
Living	BV-REFL-CAV-A	2667	24	S		Yes
Living	BV-REFL-CAV-A	2667	28	SSE		Yes
Living	BV-REFL-CAV-A	2667	26	S		Yes
Upstairs	WB-REFL-CAV	2701	161	NNE		Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Upstairs	WB-REFL-CAV	2701	241	ESE		Yes
Upstairs	WB-REFL-CAV	2701	117	SSW		Yes
Upstairs	WB-REFL-CAV	2701	311	WNW		Yes
Void	WB-REFL-CAV	2701	12	WNW		Yes
Void	WB-REFL-CAV	2701	3020	ESE	1259	Yes
Void	WB-REFL-CAV	2701	611	SSW		Yes
Void	WB-REFL-CAV	2701	101	SSW		Yes
Kitchen/Living	WB-REFL-CAV	2701	4583	WNW	1977	Yes
WC	BV-REFL-CAV-A	2667	1650	ESE	838	Yes
WC	BV-REFL-CAV-A	2667	234	NNE		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m ²)	Bulk insulation
CONBLOCK-190-PB1	Concrete Block 190mm Concrete - Plasterboard Internally	45.1	0.00
CONCBLOCK-190-FCF-PB	Concrete Block 190mm Fully Core-Filled - Plasterboard Internally	69.2	0.00
INT-PB	Internal Plasterboard Stud Wall	128.3	0.00

Floor *type*

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.9	N/A	0.00	Timber
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.9	N/A	0.00	Timber
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.2	N/A	0.00	Timber
Bedroom 04	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Timber
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.9	Enclosed (Disc.)	0.00	Timber
Garage	CSOG-100: Concrete Slab on Ground (100mm)	35.5	N/A	0.00	Exposed
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	Enclosed (Disc.)	0.00	Timber
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	Enclosed (Disc.)	0.00	Timber
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	Enclosed (Disc.)	0.00	Tile
Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	23.9	Enclosed (Disc.)	0.00	Timber
Upstairs	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.3	N/A	0.00	Timber
Void	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
WC	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.6	Enclosed (Disc.)	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 04	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Garage	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Upstairs	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Void	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	3.00	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	250	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	3	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Bedroom 04	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	250	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	250	Sealed
Laundry	1	Downlight	100	Sealed
Living	3	Downlight	100	Sealed
Upstairs	2	Downlight	100	Sealed
Void	4	Downlight	100	Sealed
WC	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 01	1	1200
Bedroom 02	1	1200
Bedroom 03	1	1200

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 04	1	1200
Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	1.30	0.74	Dark (Ironstone)
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.74	Dark (Ironstone)

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. #HR-QO2RXS-01

Generated on 15 Dec 2021 using HERO v1.2-beta

Property

Address Lot C, 75 Shirley Street, BYRON BAY,
NSW, 2481

Lot/DP

NCC Class* 1a

Type New

Plans

Main Plan HGA225

Prepared by Harley Graham Architects

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	177.5
Unconditioned*	7.7
Total	220.7
Garage	35.5
	NatHERS climate zone
	10 - Brisbane AMO



Accredited assessor

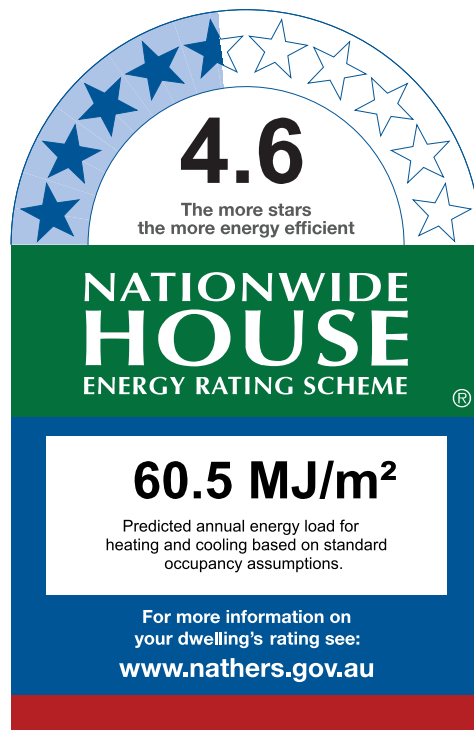
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
GJA-071-01 A	Type 245 Aluminium Sliding Door DG 4/10/4	3.98	0.63	0.60	0.66

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-03 A	WC.11	2700	710	Louvre	90	ESE	None
Bedroom 01	ALM-002-03 A	DC.06	2700	1950	Sliding	45	ESE	None

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-03 A	W13	1490	1850	Casement	45	SSW	None
Bedroom 02	ALM-002-03 A	DC.04	2700	2550	Sliding	45	WNW	None
Bedroom 02	ALM-002-03 A	WC.04	2700	755	Double Hung	45	WNW	None
Bedroom 03	ALM-001-03 A	WC.08	1515	1425	Casement	45	ESE	None
Bedroom 03	ALM-002-03 A	WC.09	1515	1253	Fixed	0	ESE	None
Bedroom 04	ALM-002-03 A	DC.05	2700	2435	Sliding	45	WNW	None
Bedroom 04	ALM-002-03 A	WC.07	2700	730	Double Hung	45	WNW	None
Ensuite	ALM-001-03 A	WC.12	1685	1365	Double Hung	22	ESE	None
Ensuite	ALM-001-03 A	W12	1454	820	Casement	90	SSW	None
Entry	ALM-001-03 A	WC.03	2100	1285	Awning	30	ESE	None
Kitchen/Living	GJA-071-01 A	DC.01	2650	3700	Sliding	66	SSW	None
Kitchen/Living	GJA-071-01 A	DC.02	2650	8921	Sliding	75	WNW	None
Laundry	ALM-001-03 A	WC.02	2100	547	Awning	60	NNE	None
Stairs	ALM-001-03 A	WC.10	2400	2890	Awning	20	ESE	None
Kitchen/Living	ALM-002-03 A	WC.05	2700	755	Louvre	90	WNW	None
Kitchen/Living	ALM-002-03 A	WC.06	2700	3710	Fixed	0	WNW	None
WC	ALM-001-03 A	WC.01	2100	820	Awning	60	ESE	None

Roof window *type and performance value*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry	2040	1480	90	ESE
Garage	2040	5760	90	ESE

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV-A	BV-REFL-CAV: Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.00	Yes
BV-REFL-CAV-B	BV-REFL-CAV: Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	0.00	Yes
WB-REFL-CAV	WB-REFL-CAV: Weatherboard Battened (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	WB-REFL-CAV	2701	4051	ESE	1666	Yes
Bedroom 02	WB-REFL-CAV	2701	4364	SSW	296	No
Bedroom 02	WB-REFL-CAV	2701	4398	WNW	1977	Yes
Bedroom 03	WB-REFL-CAV	2701	4171	ESE	219	Yes
Bedroom 03	WB-REFL-CAV	2701	1040	SSW	3546	Yes
Bedroom 03	WB-REFL-CAV	2701	1651	NNE	9495	Yes
Bedroom 04	WB-REFL-CAV	2701	4201	WNW	1977	Yes
Ensuite	WB-REFL-CAV	2701	1836	ESE	1659	Yes

* Refer to glossary.



Ensuite	WB-REFL-CAV	2701	4496	SSW	296	No
Entry	BV-REFL-CAV-A	2667	2986	ESE	1062	Yes
Garage	BV-REFL-CAV-A	2667	5936	ESE	1072	Yes
Garage	BV-REFL-CAV-A	2667	5981	SSW	207	No
Garage	BV-REFL-CAV-A	2667	4633	WNW	5315	Yes
Garage	BV-REFL-CAV-A	2667	16	WNW		Yes
Kitchen/Living	BV-REFL-CAV-A	2667	3751	SSW	4856	Yes
Kitchen/Living	BV-REFL-CAV-A	2667	9064	WNW	1364	Yes
Laundry	BV-REFL-CAV-A	2667	2302	ESE		Yes
Laundry	BV-REFL-CAV-A	2667	1037	SSW		Yes
Laundry	BV-REFL-CAV-A	2667	813	NNE		Yes
Stairs	WB-REFL-CAV	2701	12	WNW		Yes
Stairs	WB-REFL-CAV	2701	3020	ESE	1259	Yes
Stairs	WB-REFL-CAV	2701	481	SSW		Yes
Stairs	WB-REFL-CAV	2701	101	SSW		Yes
Upstairs	WB-REFL-CAV	2701	161	NNE		Yes
Upstairs	WB-REFL-CAV	2701	117	SSW		Yes
Upstairs	BV-REFL-CAV-B	2440	275	WNW		Yes
Upstairs	WB-REFL-CAV	2701	241	ESE		Yes
Upstairs	WB-REFL-CAV	2701	311	WNW		Yes
Upstairs	BV-REFL-CAV-B	2440	286	NNE		Yes
Kitchen/Living	WB-REFL-CAV	2701	4583	WNW	1977	Yes
WC	BV-REFL-CAV-A	2667	1650	ESE	838	Yes
WC	BV-REFL-CAV-A	2667	234	NNE		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
CONBLOCK-190-PB1	Concrete Block 190mm Concrete - Plasterboard Internally	33.0	0.00
CONCBLOCK-190-FCF-PB	Concrete Block 190mm Fully Core-Filled - Plasterboard Internally	40.9	0.00
INT-PB	Internal Plasterboard Stud Wall	122.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.4	N/A	0.00	Timber
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.9	N/A	0.00	Timber
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Timber
Bedroom 04	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Timber
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.3	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.8	Enclosed (Disc.)	0.00	Timber
Garage	CSOG-100: Concrete Slab on Ground (100mm)	35.5	N/A	0.00	Exposed
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.6	Enclosed (Disc.)	0.00	Timber
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	59.3	Enclosed (Disc.)	0.00	Timber
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	Enclosed (Disc.)	0.00	Tile
Stairs	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Timber
Upstairs	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.3	N/A	0.00	Timber
WC	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.6	Enclosed (Disc.)	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Bedroom 04	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Garage	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Stairs	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Upstairs	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
Kitchen/Living	FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	3.00	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	250	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	3	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Bedroom 04	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	250	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	250	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	1	Downlight	100	Sealed
Stairs	2	Downlight	100	Sealed
Upstairs	2	Downlight	100	Sealed
Void	2	Downlight	100	Sealed
WC	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
Bedroom 01	1	1200
Bedroom 02	1	1200
Bedroom 03	1	1200
Bedroom 04	1	1200
Kitchen/Living	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-02: Flat Framed / Skillion Metal Roof + Cathedral PB Ceiling (11°-33°)	1.30	0.74	Dark (Ironstone)
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.74	Dark (Ironstone)

* 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).