

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-MOTBUK-04

Generated on 26 Jul 2024 using Hero 4.1 (Chenath v3.21)

Property

Address Main house, 32 Bower Street, Manly, NSW, 2095
Lot/DP Lot 28 / DP 8075
NCC Class* 1a
Type New

Plans

Main Plan Rev A
Prepared by Eaton Molina Architects

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 754.3	Suburban
Unconditioned* 30.8	NatHERS climate zone
Total 785.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

Name Manuel Basiri
Business name Eco Certificates Pty Ltd
Email manuel@ecocertificates.com.au
Phone +61 432471536
Accreditation No. DMN/12/1462
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.

5.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

64.7 MJ/m²
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:
www.nathers.gov.au

Thermal Performance

Heating	Cooling
41.2	23.4
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-MOTBUK-04>. 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? 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?

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
None					

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALS-010-13 A	Commercial Sliding Door DG LightBridge_ClrPrvSI_638-14-4	2.97	0.34	0.32	0.36
ALS-102-06 A	Carinya Plus 65mm Fixed Window DG 5mmClr_8_5mmClr	3.59	0.64	0.61	0.67

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bathroom	ALS-102-06 A	W30	2900	1300	Louvre	90	SW	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*
Bed 2	ALS-010-13 A	W05	2470	600	Fixed	0	W	None
Bed 2	ALS-010-13 A	W03	2470	3947	Sliding	45	N	None
Bed 3	ALS-010-13 A	W04	2470	3947	Sliding	45	N	None
Bed 4	ALS-010-13 A	W11	900	3561	Sliding	45	W	None
Bed 5	ALS-010-13 A	W05	2750	3205	Sliding	45	W	None
Bed 6	ALS-010-13 A	W07	2750	2415	Sliding	45	W	None
Bed 6	ALS-010-13 A	W28	2750	450	Fixed	0	N	None
Bed 6	ALS-010-13 A	W24	900	450	Awning	90	N	None
Bed Master	ALS-010-13 A	W07	3100	8604	Sliding	45	N	None
Bed Master	ALS-102-06 A	W08-02	2100	2100	Louvre	90	E	None
Bed Master	ALS-010-13 A	W08-01	2100	1940	Fixed	0	E	None
Bedroom 7	ALS-010-13 A	W11-L4	2900	3040	Sliding	45	SW	None
Cloak Room	ALS-102-06 A	W08	1750	1050	Louvre	90	E	None
ENS	ALS-102-06 A	W06	2470	1140	Louvre	90	E	None
ENS	ALS-102-06 A	W01	2470	1140	Louvre	90	W	None
ENS	ALS-010-13 A	W04	2750	900	Awning	60	W	None
ENS	ALS-102-06 A	W06	2750	1275	Louvre	90	W	None
ENS	ALS-010-13 A	w05	3100	2871	Sliding	45	N	None
Gym	ALS-010-13 A	W32	2900	5910	Sliding	45	NE	None
Gym	ALS-010-13 A	W31	1800	3200	Fixed	0	SE	None
Hall	ALS-010-13 A	W17	2800	900	Casement	90	W	None
Hall	ALS-010-13 A	W13	3100	1000	Sliding	45	W	None
Hall	ALS-010-13 A	W14-01	2750	2897	Fixed	0	W	None
Hall	ALS-010-13 A	W16-01	2750	2897	Fixed	0	W	None
Hall	ALS-010-13 A	W15	2750	4246	Fixed	0	W	None
Hall	ALS-102-06 A	W14-02	2750	1350	Louvre	90	W	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*
Hall	ALS-102-06 A	W16-02	2750	1350	Louvre	90	W	None
Hall	ALS-010-13 A	W17-01	3100	2897	Fixed	0	E	OP-90%
Hall	ALS-010-13 A	W18	3100	4246	Fixed	0	E	OP-90%
Hall	ALS-102-06 A	W17-02	3100	1350	Louvre	90	E	OP-90%
Hall	ALS-102-06 A	W19	3100	1350	Louvre	90	E	OP-90%
Hall	ALS-010-13 A	W29	3100	2897	Fixed	0	E	OP-90%
Kit	ALS-010-13 A	W20	3100	6075	Sliding	90	S	None
Kit	ALS-102-06 A	W27	2900	500	Louvre	90	W	None
Kit	ALS-010-13 A	W21	2900	1780	Fixed	0	W	OP-90%
Kit	ALS-010-13 A	W22	2900	2085	Fixed	0	W	OP-90%
Kit	ALS-102-06 A	W24	3100	1550	Louvre	90	N	None
Kit	ALS-102-06 A	W25-01	2100	1050	Louvre	90	E	None
Kit	ALS-010-13 A	W25-02	2110	2210	Fixed	0	E	None
Kit	ALS-010-13 A	W23	3100	9575	Sliding	45	N	None
Landing	ALS-010-13 A	W03	2945	750	Fixed	0	S	OP-90%
Landing	ALS-010-13 A	W02	2945	2100	Fixed	0	S	OP-90%
Landing	ALS-010-13 A	W01	2945	750	Fixed	0	S	OP-90%
Living	ALS-010-13 A	W13-L4	2700	4775	Sliding	66	NE	None
Living	ALS-010-13 A	D02-L4 Window	2900	555	Fixed	0	NE	None
Lobby	ALS-010-13 A	W18	2470	900	Hinged Door	90	E	None
Lobby	ALS-010-13 A	W03	2750	3550	Fixed	0	N	None
Lobby	ALS-010-13 A	W26	3510	750	Fixed	0	S	None
Lobby	ALS-010-13 A	W02	3510	750	Fixed	0	S	None
Lobby	ALS-010-13 A	W01	3510	1300	Fixed	0	S	None
Powder	ALS-102-06 A	W12	2750	1600	Louvre	90	N	None
Powder	ALS-102-06 A	W11	2750	1200	Louvre	90	E	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Powder	ALS-102-06 A	W38	1750	1050	Louvre	90	E	None
Rumpus	ALS-010-13 A	W02	2600	7195	Sliding	45	N	None
Rumpus	ALS-010-13 A	W03	2600	2200	Fixed	0	E	None
Rumpus	ALS-010-13 A	W53	2600	2200	Sliding	90	E	None
Rumpus	ALS-102-06 A	W01-1	2600	1800	Louvre	90	W	None
Rumpus	ALS-010-13 A	W01-2	2600	2205	Fixed	0	W	None
Study	ALS-102-06 A	W09-01	1750	1050	Louvre	90	E	None
Study	ALS-010-13 A	W09-02	1750	2850	Fixed	0	E	None
Study	ALS-102-06 A	W07	2800	1550	Louvre	90	N	None
Study	ALS-010-13 A	W08-1	1800	4090	Fixed	0	E	None
Study	ALS-102-06 A	W08-2	1800	2100	Louvre	90	E	None
WC	ALS-010-13 A	W04	2600	800	Fixed	0	E	None
WC	ALS-010-13 A	W52	2600	900	Hinged Door	90	E	None
WIR	ALS-010-13 A	W09-01	2100	1650	Fixed	0	E	None
WIR	ALS-102-06 A	W02-02	2100	1050	Louvre	90	E	None
WIR	ALS-010-13 A	W10	2945	1300	Fixed	0	S	OP-90%
WIR	ALS-102-06 A	W45	3100	1000	Louvre	90	W	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
VEL-011-01 W	FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

* Refer to glossary.

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
ENS	VEL-011-01 W	SKYRW 05	0	1500	3160	E	None	None
Hall	VEL-011-01 W	SKYRW 01	0	2230.00	2230.00	E	None	None
Landing	VEL-011-01 W	SKYRW 02	0	2230.00	2230.00	S	None	None
WIR	VEL-011-01 W	SKYRW 03	0	1830.00	1830.00	W	None	None
WIR	VEL-011-01 W	SKYRW 04	0	1500	2300	N	None	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
Gym	2900	1005	90	NW
Hall	2600	1195	90	S
Living	2900	975	90	NE
Living 2	2900	1130	90	SW
Lobby	2600	1005	90	N
Lobby	3510	2100	90	S
Lift	2400	870	90	W

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-NONREFL-CAV	Brick Veneer Stud Wall with Non-Reflective Sarking	0.30	Light	2.00	No
CAV-BRICK-110-110-PB-A	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.30	Light	2.20	No
CAV-BRICK-110-110-PB-B	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.30	Light	1.80	No

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
CONC-150-PB	Precast 150mm Concrete - Plasterboard Internally	0.30	Light	1.80	No
CONC-200-PB	Precast 200mm Concrete - Plasterboard Internally	0.30	Light	1.80	No
CONCBLOCK-190-CF600-PB-A	Concrete Block 190mm Core-Filled 600 ctrs - Plasterboard Internally	0.30	Light	1.80	No
CONCBLOCK-190-CF600-PB-B	Concrete Block 190mm Core-Filled 600 ctrs - Plasterboard Internally	0.30	Light	2.00	No
EMPTY-WALL	Empty Wall	0.30	Light	0.00	No
SGL-BRICK-REND	Single 90mm Brick Wall - Rendered Both Sides	0.30	Light	2.00	No
WT02-A	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.30	Light	2.00	No
WT02-B	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.30	Light	2.20	No
WT02-C	Cavity Brick Wall - 110mm/110mm Plasterboard Internally	0.30	Light	1.80	No
WT03-WT04-A	Precast 150mm Concrete - Plasterboard Internally	0.30	Light	1.80	No
WT03-WT04-B	Precast 150mm Concrete - Plasterboard Internally	0.30	Light	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	CAV-BRICK-110-110-PB-A	2900	1537	SW		Yes
Bathroom	CAV-BRICK-110-110-PB-A	2900	584	SE	6138	Yes
Bathroom	CAV-BRICK-110-110-PB-A	2900	3216	NW		Yes
Bathroom	CAV-BRICK-110-110-PB-A	2900	1784	NE	2565	No
Bed 2	WT02-B	2800	4130	W		Yes
Bed 2	WT02-B	2800	4499	N	2407	Yes
Bed 3	WT02-B	2800	4419	N	2407	Yes
Bed 3	CAV-BRICK-110-110-PB-A	2800	1811	E		Yes
Bed 3	WT02-B	2800	2319	E		Yes
Bed 4	CAV-BRICK-110-110-PB-A	2800	3563	W		Yes
Bed 4	EMPTY-WALL	2800	2546	S		No

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bed 5	CAV-BRICK-110-110-PB-A	3100	3225	W		Yes
Bed 6	CAV-BRICK-110-110-PB-A	3100	3201	W		Yes
Bed 6	CAV-BRICK-110-110-PB-A	3100	4741	N	2066	Yes
Bed 6	CAV-BRICK-110-110-PB-A	3100	2857	E		Yes
Bed Master	CAV-BRICK-110-110-PB-A	3100	9179	N	2038	Yes
Bed Master	BV-NONREFL-CAV	3100	4847	E		No
Bedroom 7	CAV-BRICK-110-110-PB-A	2900	3894	SE		No
Bedroom 7	CAV-BRICK-110-110-PB-A	2900	3059	SW		Yes
Cloak Room	BV-NONREFL-CAV	3100	3701	E		Yes
Cloak Room	BV-NONREFL-CAV	3100	2295	S		Yes
ENS	SGL-BRICK-REND	2800	882	W		No
ENS	WT02-B	2800	666	E		Yes
ENS	WT02-C	2800	1577	E		Yes
ENS	CAV-BRICK-110-110-PB-A	2800	1708	SW		Yes
ENS	CAV-BRICK-110-110-PB-A	2800	1153	W		Yes
ENS	CAV-BRICK-110-110-PB-A	2800	559	S		Yes
ENS	WT02-B	2800	1853	W		Yes
ENS	CAV-BRICK-110-110-PB-A	3100	2011	W		Yes
ENS	CAV-BRICK-110-110-PB-A	3100	3114	S		Yes
ENS	CONCBLOCK-190-CF600-PB-A	3100	278	E		Yes
ENS	CAV-BRICK-110-110-PB-A	3100	1532	W		Yes
ENS	CAV-BRICK-110-110-PB-A	3100	4847	W		Yes
ENS	CAV-BRICK-110-110-PB-A	3100	3329	N	2038	Yes
Gym	CAV-BRICK-110-110-PB-A	2900	953	NW		No
Gym	CAV-BRICK-110-110-PB-A	2900	6029	NE	3159	Yes

* Refer to glossary.



External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Gym	CAV-BRICK-110-110-PB-A	2900	5479	SE		No
Gym	CAV-BRICK-110-110-PB-A	2900	7249	SW		No
Gym	CAV-BRICK-110-110-PB-A	2900	1754	NW	703	Yes
Gym	CAV-BRICK-110-110-PB-A	2900	742	SW	1454	Yes
Hall	CAV-BRICK-110-110-PB-A	2800	3481	W		No
Hall	CAV-BRICK-110-110-PB-A	2800	3787	S		No
Hall	CAV-BRICK-110-110-PB-A	2800	1239	W		Yes
Hall	BV-NONREFL-CAV	2800	3217	E		Yes
Hall	BV-NONREFL-CAV	2800	2547	S		Yes
Hall	WT02-A	2800	1410	E		Yes
Hall	EMPTY-WALL	2800	1409	S		No
Hall	EMPTY-WALL	2800	1632	W		No
Hall	EMPTY-WALL	2800	1537	W		No
Hall	EMPTY-WALL	2800	1065	N		No
Hall	EMPTY-WALL	2800	2442	S		No
Hall	CAV-BRICK-110-110-PB-A	3100	18719	W		Yes
Hall	BV-NONREFL-CAV	3100	3217	E		Yes
Hall	BV-NONREFL-CAV	3100	2495	S		Yes
Hall	CONC-150-PB	3100	13941	E		Yes
Kit	CONC-150-PB	3100	6713	S		Yes
Kit	CONC-150-PB	3100	11393	W		Yes
Kit	CONC-150-PB	3100	647	N	4829	Yes
Kit	CONC-150-PB	3100	443	W		Yes
Kit	CONC-150-PB	3100	2196	N		Yes
Kit	CONC-150-PB	3100	6767	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kit	CONCBLOCK-190-CF600-PB-A	3100	189	E		Yes
Kit	CONC-150-PB	3100	9843	N	4829	Yes
Kit	BV-NONREFL-CAV	3100	1960	E		Yes
Landing	CONCBLOCK-190-CF600-PB-A	3100	278	W		Yes
Landing	CAV-BRICK-110-110-PB-A	3510	3650	S		Yes
Lift	CONCBLOCK-190-CF600-PB-A	2800	1528	E		No
Lift	CONCBLOCK-190-CF600-PB-A	2800	1588	S		No
Lift	EMPTY-WALL	2800	1647	W		No
Lift	CONCBLOCK-190-CF600-PB-A	2800	1465	N		No
Lift	CONCBLOCK-190-CF600-PB-A	2800	1465	S		No
Lift	CONCBLOCK-190-CF600-PB-A	2800	497	E		No
Living	CAV-BRICK-110-110-PB-A	2900	3595	NW		Yes
Living	CAV-BRICK-110-110-PB-A	2900	7948	NE	1284	Yes
Living	CAV-BRICK-110-110-PB-A	2900	3681	SE		No
Living 2	CAV-BRICK-110-110-PB-A	2900	3855	NW		Yes
Living 2	CAV-BRICK-110-110-PB-A	2900	3031	SW		Yes
Lobby	CONCBLOCK-190-CF600-PB-B	2800	4064	N		No
Lobby	CONC-150-PB	2800	4675	E		Yes
Lobby	CAV-BRICK-110-110-PB-A	2800	5172	S		No
Lobby	CONCBLOCK-190-CF600-PB-A	2800	3314	W		No
Lobby	CONC-150-PB	2800	1108	N		Yes
Lobby	CAV-BRICK-110-110-PB-A	3100	3893	N	4923	Yes
Lobby	CONC-150-PB	3510	5224	S		Yes
Lobby	CONCBLOCK-190-CF600-PB-A	3100	278	W		Yes
Powder	CONC-150-PB	3100	1715	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Powder	CONC-150-PB	3100	1642	E		Yes
Powder	BV-NONREFL-CAV	3100	580	N		Yes
Powder	BV-NONREFL-CAV	3100	1836	E		Yes
Rumpus	WT03-WT04-B	2800	8828	N	4862	Yes
Rumpus	WT03-WT04-A	2800	8268	E	2535	Yes
Rumpus	CAV-BRICK-110-110-PB-A	2800	1615	S		No
Rumpus	CAV-BRICK-110-110-PB-A	2800	3769	W		No
Rumpus	WT02-A	2800	5714	W		Yes
Rumpus	WT02-A	2800	2549	W		No
Study	BV-NONREFL-CAV	3100	4551	E		Yes
Study	CONC-200-PB	2800	2196	N		Yes
Study	CONC-200-PB	2800	6859	E	603	No
Study	BV-NONREFL-CAV	2800	1600	E		Yes
Lift	EMPTY-WALL	2800	1528	W		No
Lift	EMPTY-WALL	2800	1588	S		No
Lift	CONCBLOCK-190-CF600-PB-A	3100	1588	S		Yes
Lift	CONCBLOCK-190-CF600-PB-A	3100	1465	S		Yes
WC	WT03-WT04-A	2800	5591	E	2535	Yes
WC	CONCBLOCK-190-CF600-PB-A	2800	1623	S		No
WIR	BV-NONREFL-CAV	3100	5361	E		No
WIR	BV-NONREFL-CAV	3100	3956	S		Yes
WIR	CAV-BRICK-110-110-PB-A	3100	3114	S		Yes
WIR	CAV-BRICK-110-110-PB-A	3100	5361	W		Yes
WIR	CAV-BRICK-110-110-PB-B	3100	278	E		Yes
Lift	CONCBLOCK-190-CF600-PB-A	3100	1465	S		Yes

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
CONCBLOCK-190-CF600-PB	Concrete Block 190mm Core-Filled 600 ctrs - Plasterboard Internally	142.5	0.00
CONCBLOCK-190-HOL-PB	Concrete Block 190mm Hollow - Plasterboard Internally	38.1	0.00
SGL-BRICK-REND	Single 90mm Brick Wall - Rendered Both Sides	255.1	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	9.7	N/A	0.15	Tile (8mm)
Bed 2	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	9.5	N/A	0.15	Carpet
Bed 2	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	9.1	N/A	3.00	Carpet
Bed 3	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	9.3	N/A	0.15	Carpet
Bed 3	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	8.9	N/A	3.00	Carpet
Bed 4	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	20.3	N/A	0.15	Carpet
Bed 5	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	15.3	N/A	3.00	Carpet
Bed 6	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	15.2	N/A	3.00	Carpet
Bed Master	SUSP-CONC-300-LINED: Suspended Concrete Slab Floor (300mm) - Lined Below	35.6	N/A	0.15	Carpet
Bed Master	SUSP-CONC-300-LINED: Suspended Concrete Slab Floor (300mm) - Lined Below	8.9	N/A	3.00	Carpet
Bedroom 7	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	11.9	N/A	0.15	Carpet
Cloak Room	CSOG-150: Concrete Slab on Ground (150mm)	8.5	N/A	0.00	Tile (8mm)
ENS	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	22.7	N/A	0.15	Tile (8mm)
ENS	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	10.8	N/A	3.00	Tile (8mm)
ENS	SUSP-CONC-300-LINED: Suspended Concrete Slab Floor (300mm) - Lined Below	16.2	N/A	0.15	Tile (8mm)
Gym	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	36.9	N/A	0.15	Carpet
Hall	CSOG-150: Concrete Slab on Ground (150mm)	19.7	N/A	2.00	Tile (8mm)
Hall	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	20.2	N/A	0.15	Timber (12mm)
Hall	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	31.6	N/A	0.15	Tile (8mm)

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hall	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	16.6	N/A	3.00	Tile (8mm)
Kit	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	90.5	N/A	0.15	Tile (8mm)
Kit	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	38.2	N/A	3.00	Tile (8mm)
Landing	SUSP-CONC-300-LINED: Suspended Concrete Slab Floor (300mm) - Lined Below	19.6	N/A	0.15	Timber (12mm)
Lift	CSOG-150: Concrete Slab on Ground (150mm)	4.8	N/A	0.00	Tile (8mm)
Living	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	30.8	N/A	0.15	Carpet
Living 2	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	11.7	N/A	0.15	Carpet
Lobby	CSOG-150: Concrete Slab on Ground (150mm)	26.6	N/A	0.00	Timber (12mm)
Lobby	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	10.3	N/A	3.00	Timber (12mm)
Lobby	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	27.7	N/A	0.15	Timber (12mm)
Lobby	CSOG-150: Concrete Slab on Ground (150mm)	1.4	N/A	2.00	Timber (12mm)
Powder	CSOG-150: Concrete Slab on Ground (150mm)	7.0	N/A	0.00	Tile (8mm)
Rumpus	CSOG-150: Concrete Slab on Ground (150mm)	88.1	N/A	2.00	Tile (8mm)
Study	CSOG-150: Concrete Slab on Ground (150mm)	10.4	N/A	0.00	Tile (8mm)
Study	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	18.6	N/A	3.00	Tile (8mm)
WC	CSOG-150: Concrete Slab on Ground (150mm)	23.8	N/A	2.00	Tile (8mm)
WIR	SUSP-CONC-350-LINED: Suspended Concrete Slab Floor (350mm) - Lined Below	15.9	N/A	0.15	Tile (8mm)
WIR	SUSP-CONC-300-LINED: Suspended Concrete Slab Floor (300mm) - Lined Below	43.5	N/A	0.15	Tile (8mm)

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Bed 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Bed 3	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Bed Master	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
ENS	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Gym	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Hall	CEIL-01: Ceiling (Plasterboard)	0.00	No
Hall	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	5.00	No
Kit	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Landing	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Powder	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
Rumpus	CEIL-01: Ceiling (Plasterboard)	0.00	No
Rumpus	SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	5.00	No
Lift	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	5.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	2	Exhaust Fan	350	Sealed
Bed 2	3	Downlight	200	Sealed
Bed 3	3	Downlight	200	Sealed
Bed 4	3	Downlight	200	Sealed
Bed 5	2	Downlight	200	Sealed
Bed 6	2	Downlight	200	Sealed
Bed Master	6	Downlight	200	Sealed
Bedroom 7	2	Downlight	200	Sealed
Cloak Room	1	Downlight	200	Sealed
ENS	5	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
ENS	6	Exhaust Fan	350	Sealed
Gym	5	Downlight	200	Sealed
Hall	10	Downlight	200	Sealed
Kit	18	Downlight	200	Sealed
Kit	1	Exhaust Fan	350	Sealed
Landing	3	Downlight	200	Sealed
Living	1	Downlight	200	Sealed
Living 2	2	Downlight	200	Sealed
Lobby	9	Downlight	200	Sealed
Powder	1	Downlight	200	Sealed
Powder	1	Exhaust Fan	350	Sealed
Rumpus	2	Downlight	200	Sealed
Study	4	Downlight	200	Sealed
WC	1	Downlight	200	Sealed
WC	1	Exhaust Fan	350	Sealed
WIR	7	Downlight	200	Sealed
WIR	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
CEIL-01: Ceiling (Plasterboard)	0.00	0.50	Medium
SLAB-100-CEIL-01: Concrete Slab (100mm) with Suspended PB Ceiling	0.00	0.50	Medium
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

* Refer to glossary.



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	0.50	Medium

* 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.

These are the specifications upon which the certified NatHERS assessment is based. Any deviation from these specifications will invalidate the NatHERS certificate and therefore voids compliance of the development with the National Construction Code 2022. In case of any variation from these specifications contact Eco Certificates Pty Ltd to obtain updated NatHERS and BASIX certificates and an updated copy of these specifications. This document is a summary and general guide to the detailed specifications reflected on the NatHERS certificate of this project which must be accurately followed during design and construction of the Proposed Development.

Assessment Date: 06 / 07 / 2024

Assessor: Manuel Basiri - DMN Accredited Assessor DMN/12/1462 / MIEAust

Thermal Modeling Software: HERO 4.1

Development: EC - 4527 - 32 Bower St, Manly NSW

Windows and Skylights

	Description	Type	U Value	SHGC
1	All windows and glazed doors	As specified on the glazing layouts and specifications on the plans		
2	All fixed skylights	VELUX Fixed Skylight Double Glazed Clear	2.58	0.24
3	All operable skylights	VELUX Ventilating Skylight Double Glazed Clear	2.53	0.21

Window and skylight U and SHGC values, if specified, are according to NFRC. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 5% higher or lower, than the U and SHGC values of the product specified above.

External and Internal Walls

	Description	Construction Type	Insulation	Colour (Solar Absorptance)
1	All external walls including the garage walls	As specified on the wall layouts and specifications on the plans		
2	All internal walls	As per plans	None	N/A

The solar absorptance values are as per definition of Light, Medium and Dark Colours in the thermal modelling software and the naming might differ according to the latest version of the BASIX thermal comfort protocol.

Floors

	Description	Construction Type	Insulation	Floor Covering
1	All slab on ground floor of conditioned areas	Concrete	R 2.0	Not Specified (Defaults Applied)
2	All floors on top of unconditioned spaces, above garage and outside air	Concrete	R 3.0	Not Specified (Defaults Applied)
3	All other floors	Concrete	None	Not Specified (Defaults Applied)

Ceilings and Roofs

	Description	Construction Type	Insulation	Colour (Solar Absorptance)
1	All ceilings under another floor	As per plans	None	N/A
2	All ceilings under roof and balcony areas	As per plans	R 5.0	N/A
3	All roofs	As per plans	None (unless required by other disciplines)	As per plans

Ceiling penetration(s) as a result of installation of sealed recessed downlights and 250 mm exhaust fans are being considered in the NatHERS thermal comfort modeling associated with this specifications schedule. If unsealed recessed downlights or other unsealed penetrations are introduced to the ceiling insulation of the project at a later stage, the NatHERS certificate associated with this specification and the BASIX certificate of this development, if any, would become invalid and must be updated. The sealed recessed downlights and exhaust fans are being modelled with 50 mm insulation clearance.